



WILLIAM T FUJIOKA
Chief Executive Officer

County of Los Angeles CHIEF EXECUTIVE OFFICE

Kenneth Hahn Hall of Administration
500 West Temple Street, Room 713, Los Angeles, California 90012
(213) 974-1101
<http://ceo.lacounty.gov>

July 21, 2009

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

**DEPARTMENT OF PUBLIC WORKS: FIRE DEPARTMENT
NEW FIRE STATION 132
CITY OF SANTA CLARITA – AWARD DESIGN-BUILD CONTRACT
APPROVE REVISED PROJECT BUDGET
SPECS. 6097; CAPITAL PROJECT NO. 70931
(FIFTH DISTRICT) (3 VOTES)**

SUBJECT

This action will authorize the Department of Public Works (Public Works) to execute a design-build contract for the New Fire Station 132 project.

JOINT RECOMMENDATION WITH THE FIRE CHIEF THAT YOUR BOARD, ACTING AS THE GOVERNING BODY OF THE CONSOLIDATED FIRE PROTECTION DISTRICT OF LOS ANGELES COUNTY:

1. Acting as a responsible agency for the New Fire Station 132, consider and approve the Addendum prepared by the Consolidated Fire Protection District of Los Angeles County and consider the Negative Declaration prepared and adopted by the City of Santa Clarita, as lead agency, together with any comments received during the public review process. Certify that your Board has independently considered and reached its own conclusions regarding the environmental effects of the proposed project as shown in the Addendum and Negative Declaration.

Board of Supervisors
GLORIA MOLINA
First District

MARK RIDLEY-THOMAS
Second District

ZEV YAROSLAVSKY
Third District

DON KNABE
Fourth District

MICHAEL D. ANTONOVICH
Fifth District

"To Enrich Lives Through Effective And Caring Service"

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2. Approve the \$8,967,000 revised project budget for the New Fire Station 132 project, Capital Project No. 70931.
3. Find that Novus Construction is the Responsive and Responsible Bidder whose proposal is determined to be the best value and most advantageous for the design and construction of the New Fire Station 132, based on the criteria stated in the request for proposals, including qualifications, technical design, construction expertise, proposed delivery plan, price, skilled labor force availability, acceptable safety record, and life cycle cost.
4. Award and authorize the Director of Public Works to execute a design-build contract with Novus Construction to provide the design and construction services for a \$6,196,307 not-to-exceed fee to be funded through Tax-Exempt Commercial Paper and ultimately be financed through the issuance of long-term bonds to be repaid from the Consolidated Fire District, subject to receipt by the County of acceptable Faithful Performance and Payment for Labor and Materials Bonds and evidence of required contractor insurance filed by the design-build entity.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

Approval of the recommended action will consider the previously adopted Negative Declaration, consider and approve the Addendum to the Negative Declaration, and authorize Public Works to execute a design-build contract for design and construction of the New Fire Station 132 project.

The proposed project is a new 9,400 square-foot fire station that will be constructed on one acre at 29310 Sand Canyon Road, Santa Clarita, and will consist of a two-bay apparatus room, main office, day room, kitchen, exercise room, and dormitory quarters for seven personnel. The proposed project also incorporates all the necessary sustainable design features that allow the County to apply for a United States Green Building Council (USGBC), Leadership in Energy and Environmental Design (LEED) Silver Certification upon successful implementation and completion as mandated by your Board.

On June 17, 2008, your Board adopted the County's design-build policy and authorized the Director of Public Works to use design-build as an option for delivery of County capital building projects in excess of \$2,500,000. One of the goals underlying the use of the design-build project delivery method is a more collaborative approach for project delivery, including obtaining benefits such as reducing project cost, expediting project

completion, and providing design options not achievable through the design-bid-build process. In addition, design-build may yield cost efficiencies by shifting certain liability and risk for cost containment and project completion to the design-builder. Considering urgent needs for fire protection and emergency medical services, it was recommended that the design-build project delivery method be used for this new fire station project.

Based on the Board-approved design-build policy and procedures, Novus Construction (Novus) was found to have submitted the best value and most advantageous proposal to perform the design and construction of Fire Station 132. We recommend your Board award the design-build contract to Novus for \$6,196,307, subject to Novus satisfying the conditions for contract award.

Sustainable Design Program

The project supports your Board's Sustainable Design Program by requiring a USGBC, LEED Silver Certification for the fire station. There will also be savings due to a reduction in electricity as a result of the sustainable building elements such as energy efficient light fixtures with timer controls in the design. The facility heating, ventilation, and cooling system will utilize an energy management control system. The project will use water-efficient fixtures in the restrooms and exterior site landscaping areas will be constructed using drought tolerant plants.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provision of Operational Effectiveness (Goal 1) by improving the efficiency, quality, and responsiveness of County services to all residents. It also directs that we ensure Children, Family and Adult Well-Being (Goal 2) by enhancing the ability of families to live in safe, stable, and supportive communities. We are also directed to improve Community and Municipal Services (Goal 3) by offering a wide range of services responsive to each community's needs. This project will help to achieve these goals as it is an investment in public infrastructure that will benefit the Santa Clarita Valley community by improving the Fire District's ability to respond to local emergencies.

FISCAL IMPACT/FINANCING

On May 13, 2008, your Board approved the preliminary project budget of \$10,020,000. The \$8,967,000 revised total project budget includes the preparation of scoping documents, plan check fees, design and construction, Additive Alternate 1 that provides for apparatus driveway improvements, design completion contingency, change orders,

consultant services, miscellaneous expenditures, Civic Art allocation, and County services. The construction contract will be issued to Novus for \$6,196,307 and includes a base bid of \$6,026,455 and an additive alternate of \$169,852.

Sufficient funding is available in the Fiscal Year 2009-10 Capital Projects/Refurbishment Budget to proceed with the recommended actions. The project is funded with Commercial Paper Proceeds and developer fees. There is no impact to net County costs.

The Project Schedule and Budget Summary are included in Attachment A.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

A standard contract, in the form previously approved by County Counsel, will be used. The standard Board-directed clauses that provide for contract termination, renegotiation, and hiring qualified displaced County employees will be included in the contract.

The project specifications contain provisions requiring the contractor to report solicitations of improper consideration by County employees and allowing the County to terminate the contract if it is found that the contractor offered or gave improper consideration to County employees.

As requested by your Board on August 12, 1997, and as a threshold requirement for consideration for contract award, Novus is willing to consider Greater Avenues for Independence Program/General Relief Opportunities for Work participants for future employment.

As required by your Board, language has been incorporated into the project specifications stating that the contractor shall notify its employees, and shall require each subcontractor to notify its employees, about Board Policy 5.135 (Safely Surrendered Baby Law) and that they may be eligible for the Federal Earned Income Credit under the Federal income tax laws.

Novus is in full compliance with Los Angeles County Code Chapter 2.200 (Child Support Compliance Program) and Chapter 2.203 (Contractor Employee Jury Service Program).

As required by your Board, the project cost includes 1 percent of design and construction costs to be allocated to the Civic Art Fund per your Board's Civic Art Policy adopted on December 7, 2004.

ENVIRONMENTAL DOCUMENTATION

The City of Santa Clarita prepared a Negative Declaration for Fire Station 132, which was made available to the public for review and comments from October 25 to November 14, 2006. The City approved the Negative Declaration and a Notice of Determination was posted by the County of Los Angeles Registrar-Recorder/County Clerk.

The Consolidated Fire Protection District prepared an Addendum to the previously approved Negative Declaration to further evaluate air quality and noise. The Initial Study and Negative Declaration adopted by the City of Santa Clarita and the Addendum prepared by the Consolidated Fire Protection District are attached (Attachment C). The Negative Declaration and Addendum show that there is no substantial evidence, in light of the whole record before the County, that the project may have a significant effect on the environment.

Upon your Board's approval of the project, Public Works will file a Notice of Determination with the Registrar-Recorder/County Clerk in accordance with Section 21152(a) of the California Public Resources Code.

CONTRACTING PROCESS

On September 8, 2008, the request for qualifications for design-build services was advertised. This contract opportunity was also listed in the County's Doing Business with Us website.

The first phase of the request for proposals process was submission of prequalification questionnaires. On October 6, 2008, 13 firms submitted the prequalification questionnaires for evaluation. The prequalification questionnaires were evaluated by the evaluation committee consisting of representatives from the Chief Executive Office, Public Works, and the Fire District based on responses to questions concerning the business type and ownership of each design-build entity, evidence that the design-builder has experience and capacity to perform projects of similar size and complexity, licenses, registration, credentials, the capacity to obtain payment and performance bonding, errors and omissions, insurance, violations of State and Federal labor codes and safety regulations, debarment, default bankruptcy, lawsuits on public

work projects in the preceding five years, and other relevant criteria. Based on the review and evaluation of the prequalification questionnaires, all 13 firms were determined to be prequalified. In accordance with the shortlisting requirements in the request for proposals, the five top-ranked firms were shortlisted and invited to submit technical and cost proposals.

The second phase of the request for proposals process was submission of technical and cost proposals by the top five prequalified firms. On February 3, 2009, the five firms submitted technical and cost proposals for evaluation. The technical and cost proposals were evaluated by a panel of representatives from the Chief Executive Office, Public Works, and the Fire District based on technical design, construction expertise, proposed delivery plans, price, life cycle costs, skilled labor force availability, acceptable safety record, and design-build team personnel and organization. Final ranking of the proposers is listed in Attachment B. Novus was found to have submitted the best value and most advantageous proposal to perform these services in accordance with the evaluation criteria stated in the request for proposals. These evaluations were completed without regard to race, creed, color, or gender. On May 28, 2009, upon negotiating minor scope modifications and value engineering with Novus, the proposed best value design-builder, a revised cost proposal of \$6,196,307 was obtained.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There will be no impact of current County services or projects during the performance of the recommended services.

The Honorable Board of Supervisors
July 21, 2009
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CONCLUSION

Please return one adopted copy of this letter to the Chief Executive Office, Capital Projects Division; one to the Department of Public Works, Project Management Division II; and one to the Fire District.

Respectfully submitted,



WILLIAM T FUJIOKA
Chief Executive Officer



P. MICHAEL FREEMAN
Fire Chief

WTF:GF:DL
DJT:SW:zu

Attachments

c: Auditor-Controller
County Counsel
Fire District
Department of Public Works
Department of Public Social Services (GAIN/GROW Program)
Office of Affirmative Action Compliance

July 21, 2009

ATTACHMENT A

**DEPARTMENT OF PUBLIC WORKS: FIRE DEPARTMENT
NEW FIRE STATION 132
CITY OF SANTA CLARITA – AWARD DESIGN-BUILD CONTRACT
APPROVE REVISED PROJECT BUDGET
SPECS. 6097; CAPITAL PROJECT NO. 70931
(FIFTH DISTRICT) (3 VOTES)**

I. PROJECT SCHEDULE

Project Activity	Scheduled Completion Date
Project Scoping Documents	Completed
Design and Construction Award	07/14/09
Construction	
Substantial Completion	03/30/11
Station Operational	04/30/11
Project Acceptance	05/30/11

II. PROJECT BUDGET SUMMARY

Budget Category	Project Budget	Impact of This Action	Revised Project Budget
Land Acquisition	\$ 0	\$ 0	\$ 0
Construction			
Design-Build Contract (including design completion contingency)	\$6,930,000	(\$ 903,545)	\$6,026,455
Alternate 1	0	169,852	169,852
Change Order (5percent)	693,000	(399,072)	293,928
Telecommunication Equipment – Affixed to Building	220,000	0	220,000
Utility Connection Fees	50,000	0	50,000
Civic Arts	79,000	(20,235)	\$ 58,765
Subtotal	\$7,972,000	(\$1,153,000)	\$6,819,000
Programming/Development	\$ 0	\$ 0	\$ 0
Plans and Specifications			
Architect/Engineering Services	220,000	100,000	320,000
Subtotal	\$ 220,000	\$ 100,000	\$ 320,000
Consultant Services			
Deputy Inspection	\$ 90,000	0	\$ 90,000
Site Planning	0	0	0
Hazardous Materials	0	0	0
Geotech/Soils Test	24,000	0	24,000
Material Testing	25,000	0	25,000
Cost Estimating	35,000	0	35,000
Project Scheduling	15,000	0	15,000
Constructability Review	35,000	0	35,000
Construction Management Support	55,000	0	55,000
Construction Administration	0	0	0
Environmental	30,000	0	30,000
Move Management	0	0	0
Equipment Planning	0	0	0
Legal	0	0	0
Contract/Change Order	0	0	0
Other	0	0	0
Subtotal	\$ 309,000	\$ 0	\$ 309,000
Miscellaneous Expenditures			
Furniture, Fixtures, and Equipment	\$ 90,000	\$ 0	\$ 90,000
Printing	20,000	0	20,000
Los Angeles County Affirmative Action Compliance	16,000	0	16,000
Subtotal	\$ 126,000	\$ 0	\$ 126,000

II. PROJECT BUDGET SUMMARY *(continued)*

Budget Category	Project Budget	Impact of This Action	Revised Project Budget
Jurisdictional Review/Plan Check/Permit	\$ 67,800	\$ 0	\$ 67,800
County Services			
Code Compliance and Quality Control Inspections	\$ 269,526	\$ 0	\$ 269,526
Design Review	43,680	0	43,680
Design Services	0	0	0
Contract Administration	43,967	0	43,967
Project Management	541,178	0	541,178
Project Management Support Services	260,000	0	260,000
Secretarial	24,944	0	24,944
Document Control	0	0	0
ISD Job Order Contract Management	0	0	0
DPW Job Order Contract Management	0	0	0
ISD ITS Communications	\$0	0	0
Project Security	\$0	0	0
Project Technical Support	62,059	0	62,059
Consultant Contract Recovery	79,846	0	79,846
County Counsel	0	0	0
Other	0	0	0
Design Services	0	0	\$ 0
Subtotal	\$ 1,325,200	\$ 0	\$1,325,200
Total	\$10,020,000	(\$1,053,000)	\$8,967,000

July 21, 2009

ATTACHMENT B

**DEPARTMENT OF PUBLIC WORKS: FIRE DEPARTMENT
NEW FIRE STATION 132
CITY OF SANTA CLARITA – AWARD DESIGN-BUILD CONTRACT
APPROVE REVISED PROJECT BUDGET
SPECS. 6097; CAPITAL PROJECT NO. 70931
(FIFTH DISTRICT) (3 VOTES)**

The proposed project is a new 9,400-square-foot fire station that will be constructed on 1 acre at 29310 Sand Canyon Road, Santa Clarita, and will consist of a two-bay apparatus room, main office, day room, kitchen, exercise room, and dormitory quarters for seven personnel.

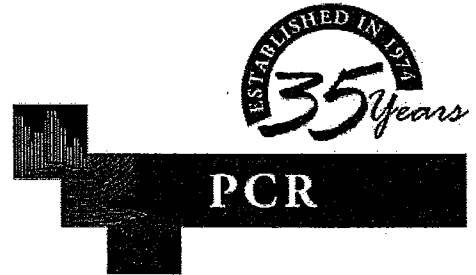
Proposal Date: February 3, 2009

Proposer Ranking From Most Advantageous To Least:

1. Novus Construction
2. GKK Works
3. Harbor Construction
4. R.J. Daum
5. Sinanian Development

The contract will be issued to Novus Construction for \$6,196,307.

ATTACHMENT C



June 25, 2009

Ken Schumann
Project Management Division II
LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
900 S. Fremont Avenue
Alhambra, California 91803

**Re: ADDENDUM TO INITIAL STUDY/NEGATIVE DECLARATION PREPARED FOR
FIRE STATION NUMBER 132 (MASTER CASE 96-072) IN THE CITY OF SANTA
CLARITA, CALIFORNIA**

Dear Mr. Schumann:

In accordance with the California Environmental Quality Act (CEQA), an Addendum to the Fire Station Number 132 Final Initial Study/Negative Declaration has been prepared in response to the County of Los Angeles' request for technical information regarding air quality and noise to supplement the previously adopted negative declaration. As indicated in the attached Addendum, no substantial changes to Fire Station 132 are being considered, and the information included in the Addendum does not create any new significant environmental effect, nor does it increase the severity of any previously identified significant effects. Such additional technical information is consistent with the provisions of CEQA Guidelines Section 15164 regarding preparation of an Addendum.

Sincerely,
PCR SERVICES CORPORATION

A handwritten signature in black ink, appearing to read 'Mike Harden', is written over a horizontal line.

Mike Harden
Principal Planner

Enclosure:

- Addendum to the Fire Station 132 Final IS/ND
- Attachment A: Air Worksheets
- Attachment B: Figure 1 - Noise Measurement and Sensitive Receptor Locations

**ADDENDUM TO THE FIRE STATION NUMBER 132
FINAL INITIAL STUDY/NEGATIVE DECLARATION
DECEMBER 2006**

I. INTRODUCTION

The County of Los Angeles has proposed the development and construction of Fire Station Number 132 at the northeast corner of San Canyon Road and Thompson Ranch Road in the City of Santa Clarita. Fire Station 132 would be an approximately 10,500 square foot facility on an approximately 1.6 acre site within the Stetson Ranch housing development (formerly known as Wes Thompson Ranch). It should be noted that a temporary fire station has been operating immediately adjacent within approximately 50 feet to the north/northeast of the proposed project site for the last two years. An Initial Study/Negative Declaration (IS/ND) was prepared for the Fire Station 132 Project. Pursuant to the provisions of the California Environmental Quality Act (CEQA), the City of Santa Clarita distributed the IS/ND for public review and comment from October 25, 2006 to November 14, 2006. Subsequent to the public review period, the County of Los Angeles requested technical information regarding air quality and noise to supplement the previously adopted negative declaration. Specifically, the requested air analysis relates to providing a technical analysis of Greenhouse Gas (GHG) emissions during construction and operation of the proposed fire station consistent with the most recent guidance from the Office of Planning and Research (OPR). The requested noise analysis regards providing a quantitative technical evaluation of construction and operational noise impacts associated with the fire station. The requested supplemental air quality and noise analysis are contained in Sections III and IV, respectively, below. This Addendum has been prepared by the County of Los Angeles.

II. PURPOSE OF ADDENDUM AND CEQA REQUIREMENTS

The purpose of this Addendum is to append supplemental technical information addressing issues raised by the County of Los Angeles regarding Fire Station 132 subsequent to adoption of the IS/ND. This document has been prepared in accordance with Sections 15164 and 15162 of the State CEQA Guidelines.

Section 15164(b) of the CEQA Guidelines states:

An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.

Section 15162(a) of the CEQA Guidelines provides that, for a project covered by a certified EIR or adopted negative declaration, preparation of a subsequent EIR or negative declaration rather than an Addendum is required only if one or more of the following conditions occur:

1. *Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;*
2. *Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of the previously identified significant effects; or*
3. *New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time of the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:*
 - a) *The project will have one or more significant effects not discussed in the previous EIR or negative declaration;*
 - b) *Significant effects previously examined will be substantially more severe than shown in the previous EIR or negative declaration;*
 - c) *Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or*
 - d) *Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR or negative declaration would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternative.*

Section 15162(b) of the CEQA Guidelines states:

If changes to a project or its circumstances occur or new information becomes available after adoption of a negative declaration, the lead agency shall prepare a subsequent EIR if required under subsection (a) [above]. Otherwise the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum or no further documentation.

An Addendum to the Negative Declaration is the appropriate CEQA document to address issues raised by the County of Los Angeles subsequent to adoption of the IS/ND because none of the criteria set forth in Section 15162(a)(1), (2), and (3) of the CEQA Guidelines have been triggered by the inclusion of this technical information. No changes to the Fire Station 132 project are being considered to what was included in the adopted ND, and the information included in this Addendum does not create any new significant environmental effects, nor does it increase the severity of any previously identified significant effects. The addendum is prepared pursuant to a request for supplemental technical information in specific areas subsequent to adoption of the Negative Declaration.

Pursuant to Section 15164[c], an Addendum to a negative declaration need not be circulated for public review but can be included in or attached to an adopted negative declaration.

III. SUPPLEMENTAL AIR QUALITY ANALYSIS

a. Purpose

The analysis of impacts to global climate change was not included when the previously adopted IS/ND was completed, since they were not routinely included in environmental analyses at that time. This analysis of impacts relating to global climate change considers statutory requirements as well as regulatory guidance from the California Air Pollution Control Officers Association (CAPCOA), the State Office of the Attorney General and the Governor's Office of Planning and Research (OPR), as well as draft regulatory publications from the South Coast Air Quality Management District (SCAQMD), and the California Air Resources Board (CARB), to assess the potential impacts of the project on global climate change and the potential impacts of global climate change on the project. It is important to note the project description in the previously adopted IS/ND has not changed and the previously completed air quality analysis also remains unchanged.

As part of this addendum to the previously adopted IS/ND, PCR conducted a project-level analysis, as well as a cumulative effects analysis to estimate the effects of GHG emissions during construction and operation of the proposed fire station. The primary objectives of this analysis were to quantify the GHG emissions resulting from (1) the typical everyday operation of the fire station and (2) construction of the fire station. As part of the analysis, a qualitative assessment of project features that will help reduce GHG emissions is also provided.

b. Background

Global climate change refers to changes in average climatic conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however some data indicate that the current global conditions differ from past climate changes in rate and magnitude. There continues to be significant scientific uncertainty concerning the extent to which increased concentrations of GHGs have caused or will cause climate change, and over the appropriate actions to limit and/or respond to climate change.

GHGs are those compounds in the Earth's atmosphere which play a critical role in determining temperature near the Earth's surface. Specifically, these gases allow high-frequency shortwave solar radiation to enter the Earth's atmosphere, but retain some of the low frequency infrared energy which is radiated back from the Earth towards space, resulting in a warming of the atmosphere. This phenomenon is known as the greenhouse effect. Increased concentrations of GHGs in the Earth's atmosphere have been linked to global climate change and such conditions as rising surface temperatures, melting icebergs and snowpack, rising sea levels, and the increased frequency and magnitude of severe weather conditions. Existing climate change models also show that climate warming portends a variety of impacts on agriculture, including loss of microclimates that support specific crops, increased pressure from invasive weeds and diseases, and loss of productivity due to changes in water reliability and availability. In addition, rising temperatures and shifts in microclimates associated with global climate change are expected to increase the frequency and intensity of wildfires.

GHGs include carbon dioxide (CO₂), methane (CH₄), ozone (O₃), water vapor (H₂O), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Carbon dioxide is the most abundant GHG in the atmosphere, and represents 77 percent of total GHG emissions.¹ GHGs are the result of both natural and anthropogenic activities. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions. In the state of California, the transportation sector is the greatest source of GHG emissions, accounting for 38 percent of total GHG emissions in 2004, the latest year for which data are available.²

Not all GHGs exhibit the same ability to induce climate change; as a result, GHG contributions are commonly quantified in the equivalent mass of CO₂, denoted as CO₂e. CO₂e

¹ *Intergovernmental Panel on Climate Change, Fourth Assessment Report, Synthesis Report, 2007.*

² *California Air Resources Board, Greenhouse Gas Emissions Inventory Data: 2004 GHG emissions by Sector, 2008.*

allows for comparability among GHGs with regard to the global warming potential (GWP). Mass emissions are calculated by converting pollutant specific emissions to CO₂e emissions by applying the proper global warming potential (GWP) value.³ These GWP ratios are available from the United States Environmental Protection Agency (USEPA) and published in the California Climate Action Registry (CCAR) Protocol. By applying the GWP ratios, project related CO₂e emissions can be tabulated in metric tons per year. The CO₂e values are calculated for the entire construction period. Construction output values used in this analysis are adjusted to represent a CO₂e value representative of CO₂, CH₄, and N₂O emissions from project construction activities. HFCs, PFCs, and SF₆ are not byproducts of combustion, the primary source of construction-related GHG emissions, and therefore are not included in the analysis. Construction CH₄ and N₂O values are derived from factors published in the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories. These values are then converted to metric tons of CO₂e for consistency.

Our understanding of the fundamental processes responsible for global climate change has improved over the past decade, and our predictive capabilities are advancing. However, there remains significant scientific uncertainty, for example, in predictions of local effects of climate change, occurrence of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system, the uncertainty surrounding climate change may never be completely eliminated. Because of these uncertainties, there continues to be significant debate as to the extent to which increased concentrations of GHGs have caused or will cause climate change, and with respect to the appropriate actions to limit and/or respond to climate change.

The IPCC, in its Fourth Assessment Report (FAR), stated that "it is likely that there has been significant anthropogenic warming over the past 50 years."⁴ However, it is impossible to identify a single development project as the cause of future specific climate change impacts due to the global nature of climate change. Also in the FAR, the IPCC holds that the impacts of future climate change will vary across regions. While "large-scale climate events have the potential to cause very large impacts," the impacts of future climate change will be mixed across regions.

³ CO₂e was developed by the Intergovernmental Panel on Climate Change (IPCC), and published in its Second Assessment Report (SAR) 1996.

⁴ Intergovernmental Panel on Climate Change, *Fourth Assessment Report, Summary for Policy Makers*, 2007.

c. Regulatory Framework

Federal. On May 19, 2009, President Obama announced a new federal policy “aimed at both increasing fuel economy and reducing greenhouse gas pollution for all new cars and trucks sold in the United States.” The policy proposes fuel efficiency standards that would apply to model years 2012 through 2016. These standards would be more aggressive than the federal Corporate Average Fuel Economy (CAFE) standards and would result in a reduction of approximately 900 million metric tons of GHG.

State. In response to growing scientific and political concern regarding global climate change, California has recently adopted a series of laws to reduce both the level of GHGs in the atmosphere and to reduce emissions of GHGs from commercial and private activities within the State. In September 2002, Governor Gray Davis signed Assembly Bill (AB) 1493, requiring the development and adoption of regulations to achieve “the maximum feasible reduction of greenhouse gases” emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the State. It should be noted that setting emission standards on automobiles is solely the responsibility of the federal Environmental Protection Agency. The federal Clean Air Act (CAA) allows States to set state-specific emission standards on automobiles if they first obtain a waiver from the USEPA. The USEPA denied California’s request for a waiver, thus delaying the CARB’s proposed implementation schedule for setting emission standards on automobiles to help reduce GHGs.

In June 2005, Governor Schwarzenegger signed Executive Order S-3-05, which established GHG emissions targets for the state, as well as a process to ensure the targets are met. The order directed the Secretary for California EPA to report every two years on the State’s progress toward meeting the Governor’s GHG emission reduction targets. As a result of this executive order, the California Climate Action Team (CAT), led by the Secretary of the California EPA, was formed. The CAT is made up of representatives from a number of State agencies and was formed to implement global warming emission reduction programs and reporting on the progress made toward meeting statewide targets established under the Executive Order. State agency members include the Business, Transportation and Housing Agency; Department of Food and Agriculture; Resources Agency; Air Resources Board; California Energy Commission; the Public Utilities Commission; and Department of Water Resources. The CAT published its *Climate Action Team Report to Governor Schwarzenegger and the Legislature* in March 2006, in which it laid out forty-six specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the executive order.

In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act of 2006, also known as AB 32, into law. AB 32 commits the State to achieving the following:

- A reduction of GHG emissions to 2000 levels by 2010 (which represents an approximately 11 percent reduction from business as usual).
- A reduction of GHG emissions to 1990 levels by 2020 (approximately 30 percent below business as usual).

To achieve these goals, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. The following schedule outlines the CARB actions mandated by AB 32:

- By January 1, 2008, CARB adopts regulations for mandatory (GHG) emissions reporting, defines 1990 emissions baseline for California (including emissions from imported power), and adopts it as the 2020 statewide cap.⁵
- By January 1, 2009, CARB adopts plan to effect GHG reductions from significant sources of GHG via regulations, market mechanisms and other actions.⁶
- During 2009, CARB drafts rule language to implement its plan and holds a series of public workshop on each measure (including market mechanisms).
- By January 1, 2010, early action measures will take effect.
- During 2010, CARB, after workshops and public hearings, conducts series of rulemakings to adopt GHG regulations including rules governing market mechanisms.
- By January 1, 2011, CARB completes major rulemakings for reducing GHGs, including market mechanisms. CARB may revise and adopt new rules after January 1, 2011 to achieve the 2020 goal.
- By January 1, 2012, GHG rules and market mechanisms adopted by CARB take effect and become legally enforceable.
- December 31, 2020 is the deadline for achieving 2020 GHG emissions cap.

⁵ CARB has adopted 427 million metric tons of carbon dioxide equivalent (MMTCO₂e) as the total statewide greenhouse gas 1990 emissions level and the 2020 emissions limit. See <http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm> (last visited 8/14/2008).

⁶ CARB released the Climate Change Proposed Scoping Plan in October 2008, which details the strategies that the State will use to reduce GHG emissions. The Plan was approved at the Board hearing in December 2008.

CARB's list of discrete early action measures that can be adopted and implemented before January 1, 2010 was approved on June 21, 2007, and focuses on major State-wide contributing sources and industries, not on individual development projects or practices. These early action measures are: 1) a low-carbon fuel standard; 2) reduction of refrigerant losses from motor vehicle air conditioning system maintenance; and 3) increased methane capture from landfills. Recently, CARB released emissions inventory estimates for 1990 through 2004.

A companion bill to AB 32, Senate Bill (SB) 1368, requires the California Public Utilities Commission (CPUC) and California Energy Commission (CEC) to establish GHG emission performance standards for the generation of electricity. These standards will also generally apply to power that is generated outside of California and imported into the State. SB 1368 provides a mechanism for reducing the emissions of electricity providers, thereby assisting ARB to meet its mandate under AB 32. On January 25, 2007, the CPUC adopted an interim GHG Emissions Performance Standard (EPS), which is a facility-based emissions standard requiring that all new long-term commitments for baseload generation to serve California consumers be with power plants that have GHG emissions no greater than a combined cycle gas turbine plant. That level is established at 1,100 pounds of CO₂ per megawatt-hour (MW/hr). Further, on May 23, 2007, the CEC adopted regulations that establish and implement an identical EPS of 1,100 pounds of CO₂ per MW/hr (see CEC order No. 07-523-7).

An additional bill related to AB 32, SB 97, requires the California Office of Planning and Research (OPR), by July 1, 2009, to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including but not limited to, effects associated with transportation or energy consumption. The Resources Agency will then be required to certify and adopt the guidelines by January 1, 2010, and to periodically update the guidelines to incorporate new information or criteria established by the CARB pursuant to AB 32.⁷ The OPR released a technical advisory on addressing climate change through CEQA Review on June 19, 2008. This guidance document outlines suggested components to CEQA disclosure: quantification of GHG emissions from a project's construction and operation, determination of significance of the project's impact to climate change, and if the project is found to be significant, the identification of suitable alternatives and mitigation measures.

There has also been California legislative activity acknowledging the relationship between land use planning and transportation sector GHG emissions. California Senate Bill 375 (passed Assembly on 8/25/2008; passed Senate on 8/30/2008; signed by the Governor on September 30, 2008) links regional planning for housing and transportation with the greenhouse

⁷ *Senate Bill No. 97, Chapter 185, approved by Governor Schwarzenegger and filed with the Secretary of State, August 24, 2007.*

gas reduction goals outlined in AB 32. Reductions in GHG emissions would be achieved by, for example, locating housing closer to jobs, retail, and transit. Under the bill, each Metropolitan Planning Organization would be required to adopt a sustainable community strategy to encourage compact development so that the region will meet a target, created by CARB, for reducing GHG emissions.

Local. In January 2007, as part of the County's efforts to help conserve natural resources and protect the environment, the County of Los Angeles Board of Supervisors adopted a comprehensive Countywide Energy and Environmental Policy. The goal of the Policy is to provide guidelines for the development, implementation, and enhancement of energy conservation and environmental programs. The Policy established an Energy and Environmental Team to coordinate the efforts of various County departments, establish a program to integrate sustainable technologies into its Capital Project Program, reduce energy consumption in County facilities by 20 percent by the year 2105, and commit to joining the California Climate Action Registry to assist the County in establishing goals for the reduction of GHG emissions. The County joined the Climate Action Registry in 2007. The Policy consists of the following four program areas designed to promote "green" design and operation of County facilities and to reduce the County's "environmental footprint:"

- energy and water efficiency,
- environmental stewardship,
- public outreach and education, and
- sustainable design.

The energy and water efficiency program area's goal is to reduce energy consumption in County facilities by 2015 through decreasing energy and water waste, implementing energy and water efficiency projects, and educating employees on energy and water conservation. The environmental stewardship program area focuses on measuring and reducing the County's environmental footprint by becoming a member of the California Climate Action Registry and implementing strategies to "green" the County's basic operations. These strategies include looking into environmentally responsible purchasing standards, having recycling bins in County buildings, investigating green cleaning products for custodial operations, and investigating the utilization of existing resources. The public outreach and education program area will augment County communication and outreach to include energy and water conservation practices, utility rates and rate changes, rotating power outage information, emergency power outage information, and energy efficiency incentives. Finally, the sustainable design program area intends to incorporate sustainable and green features into the County's capital improvement and refurbishment projects with the intention of optimizing the performance and extending the useful life of County buildings.

Recognizing the overlap between land use and GHG emissions, the Los Angeles County Board of Supervisors adopted a set of green building program ordinances in November, 2008 that cover low impact development (LID) standards, drought-tolerant landscaping requirements, and green building development standards.

The LID ordinance states: “LID encourages site sustainability and smart growth in a manner that respects and preserves the characteristics of the County’s watersheds, drainage paths, water supplies, and natural resources.”⁸ For developments consisting of four or fewer residential units, at least two LID best management practices (BMPs) must be implemented in the site design. BMPs are “designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint sources of discharges, including stormwater,” and include such methods or practices as disconnecting impervious surfaces, using porous pavement, landscaping and irrigation requirements, and a green roof.

The drought-tolerant landscaping ordinance is designed to “help conserve water resources by requiring landscaping that is appropriate to the region’s climate and to the nature of a project’s use.”⁹ The ordinance applies to all projects regardless of size, and requires that 75 percent of projects’ total landscaped areas contain drought-tolerant plants. The ordinance limits the amount of turf allowed on a project site to 25 percent of the total landscaped area, or 5,000 square feet. All turf within a landscaped area must be water-efficient. In addition, landscaped areas must be organized by “hydrozones in accordance with their respective water, cultural (soil, climate, sun and light), and maintenance requirements.”

The green building ordinance is intended to encourage building practices that conserve water, energy and natural resources; divert waste from landfills; minimize impacts to existing infrastructure; and promote a healthier environment.¹⁰ Implementation of this ordinance will reduce energy demand in new buildings, and thus GHG emissions from new projects. For projects having a gross floor area more than 10,000 and less than 25,000 square feet, the ordinance requires that structures be built to new building standards in addition to being designed to meet LEED certification standards. The Green Building Standards are summarized below.

- **Energy Conservation:** Buildings must reduce energy demand by at least 15% below Title 24.

⁸ Title 12, Chapter 12.84, Low Impact Development Standards, of the Los Angeles County Code.
http://planning.lacounty.gov/assets/upl/project/green_20080507-green-building-program-ordinances.pdf.

⁹ Title 21, Chapter 22.52, Part 21, Drought Tolerant Landscaping, of the Los Angeles County Code.
http://planning.lacounty.gov/assets/upl/project/green_20080507-green-building-program-ordinances.pdf.

¹⁰ Title 22, Chapter 22.52, Part 20, Green Building, of the Los Angeles County Code.
http://planning.lacounty.gov/assets/upl/project/green_20080507-green-building-program-ordinances.pdf.

- **Outdoor Water Conservation:** A smart irrigation controller must be installed for any landscaped area of the project.
- **Resource Conservation:** At least 50 percent of construction waste (by weight) must be recycled.
- **Tree Planting:** A minimum of one 15-gallon trees must be planted and maintained for every 5,000 square feet of developed area. At least 50 percent of the trees must be listed on the drought-tolerant approved plant list.

Since the adoption of the Policy, the County has taken steps to ensure compliance with the goals of the Policy and ultimately, AB 32. In order to meet the 20 percent reduction of energy consumption goal, the County has implemented energy efficient projects in County facilities, specifically retrofitting or replacing building lighting systems and air conditioning equipment. Accordingly, annual electrical consumption in County facilities was reduced by 2.31 percent in 2007 and 3.09 percent in 2008; annual gas consumption was reduced by 1.17 percent in 2007 and 1.83 percent in 2008 (LACDPW 2008). Additionally, the Los Angeles County Recycled Water Task Force accomplished the following milestones towards its goal of recommending and implementing the use of recycled water for non-potable purposes to meet the demands of an additional 1.3 million people:

- Established membership in the Water Reuse Association and the Los Angeles County Recycled Water Advisory Committee.
- Secured Adoption of an ordinance by the Board naming the Director of Public Works or his designee the lead County official on matters related to recycled water.
- Assisted County Waterworks Districts in drafting revised policies and procedures to require its customers to use recycled water for non-potable, outdoor use.
- Participated in efforts to develop recycled water supplies within the Antelope Valley area of Los Angeles County.
- Prepared a draft 5 signature letter from the Board to the Governor requesting that Caltrans be directed to prepare a master plan for converting its irrigation systems to recycled water.
- Established effective working relationships with all recycled water providers within Los Angeles County.
- Assisted the Department of Parks and Recreation in beginning the capital planning process for converting all of their facilities to recycled water for irrigation purposes by the year 2020.

- Facilitated discussions between the Department of Parks and Recreation (DPR) and West Basin Municipal Water District (WBMWD) to enable delivery of recycled water to DPR facilities in WBMWD service area.
- Initiated development of a County-wide strategic plan in cooperation with the Chief Executive Office for converting all County facilities to recycled water for irrigation.
- Facilitated an agreement between the City of Los Angeles Department of Water and Power, the West Basin MWD, the Water Replenishment District, and Public Works to conduct a study of the Department's Modified Fouling Index standard for water delivered to the seawater barriers to potentially increase the amount of recycled water used for barrier injection.
- Developed County positions on bills pending in the California Assembly or Senate, including AB 1481, SB 201, and AB 2270.

The County has also developed/adopted and implemented tools and policies to support the reduction of GHG emissions, promote “green” development, and provide employees and the public with information and opportunities to reduce their energy consumption. These tools and policies include: the Electronic Products Environmental Assessment Tool, which identifies and certifies environmentally preferable electronic equipment; the green building ordinance, which requires all new private development within the unincorporated areas of the County to incorporate green building elements and will lead to all projects over 10,000 square feet in size to be certified under LEED™ or equivalent standards, and the incorporation of Low Impact Design Standards and drought tolerant landscaping; County-sponsored recycling programs, which have distributed 40,000 desk signed paper recycling bins to County employees and require that all County departments purchase paper with a minimum 30 percent recycled content; the Vehicle Purchasing Services Program which provides incentives for County employees, retirees, family members, and contractors/sub-contractors to purchase alternate fuel vehicles; and the Single Use Bag Reduction and Recycling Program which aims to reduce the consumption and disposal of plastic carryout bags in County unincorporated areas and partner cities (LACDPW 2008).

In addition to the achievements discussed above, the County has also committed to achieving several additional goals and standards moving forward. The County has pledged to be a “Cool County” by establishing a GHG footprint, developing a GHG mitigation plan, working with local entities to reduce regional GHG emissions by 80 percent by 2050, and supporting further legislation to raise CAFE standards. The County plans to install energy saving systems on all vending machines on its properties to reduce operating costs and GHG emissions. The County will also develop a program to allow employees to purchase public transportation passes through a “pre-tax” payroll plan and has created a countywide “solar mapping” portal to provide

an internet-based resource for residential and commercial building owners to receive information on the viability of installing rooftop solar projects (LACDPW 2008).

Regional There is no regional agency responsible for the regulation of GHG emissions related to global climate change. The South Coast Air Quality Management District (SCAQMD) is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin (SCAB). Although the SCAQMD is responsible for regional air quality planning efforts, it does not have the authority to directly regulate factors leading to global climate change or GHG emission issues associated with plans and new development projects throughout the SCAB.

In order to provide GHG emission analysis guidance to the local jurisdictions within the SCAB, the SCAQMD has organized a Working Group to develop GHG emission analysis guidance and thresholds.

SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds in October 2008. SCAQMD proposed a tiered approach, whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. SCAQMD also proposed a screening level of 3,000 metric tons per year for commercial or residential projects, under which project impacts are considered "less than significant." The 3,000 metric ton screening level was intended "to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors."¹¹ For projects with GHG increases greater than 3,000 metric tons per year, the use of a percent emission reduction target (e.g., 30 percent) was proposed to determine significance. This emission reduction target is a reduction below what is considered "business as usual." SCAQMD also proposes that projects amortize construction emissions over the 30-year lifetime of any given project. Project construction emissions can be amortized by calculating total construction period emissions and dividing by the 30-year lifetime of the project. In December 2008, SCAQMD adopted interim CEQA GHG significance thresholds for use only when SCAQMD is the lead agency on Projects. These thresholds apply to stationary source (industrial) projects only, and include a 10,000 metric ton CO₂e screening level. SCAQMD has not recommended them for use by other lead agencies at this time. As of May 2009, SCAQMD and the Working Group are developing interim CEQA GHG significance thresholds for use in a broader context by other lead agencies.

¹¹ SCAQMD, Board Meeting, December 5, 2008, Agenda No. 31, Interim GHG Significance Threshold Proposal – Key Issues/Comments Attachment D.

d. Significance Thresholds

Section 15064.7 of the CEQA Guidelines defines a threshold of significance as an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant. CEQA gives wide latitude to lead agencies in determining what impacts are significant and does not prescribe thresholds of significance, analytical methodologies, or specific mitigation measures. CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. However, the South Coast Air Quality Management District (SCAQMD), the City of Santa Clarita, and the County of Los Angeles, have not yet established specific quantitative significance thresholds for GHG emissions. The regulations required to meet the State goals under AB 32 are still under development. Furthermore, pursuant to SB 97, guidelines to be prepared by OPR for addressing greenhouse gas emissions under CEQA may not be adopted until January 1, 2010. Additionally, OPR released preliminary draft CEQA guideline amendments for GHG emissions in January 2009. OPR does not identify a threshold of significance for GHG emissions, nor has it prescribed assessment methodologies or specific mitigation measures. The preliminary draft amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The draft guideline amendments augmented Appendix G of the CEQA Guidelines, the environmental checklist form, to include a section on greenhouse gas emissions. The draft guideline amendments suggested the following questions:

Would the project:

- a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?
- b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

The preliminary draft amendments also encourage public agencies to make use of programmatic mitigation plans and programs from which to tier when they perform individual project analyses. OPR is required to “prepare, develop, and transmit” the guidelines to the Resources Agency on or before July 1, 2009, for certification and adoption. The draft guidelines were transmitted on April 13, 2009 by OPR to the Natural Resources Agency.

While the OPR has not yet adopted formal significance thresholds, OPR issued a guidance document on June 19, 2008 to provide interim advice to lead agencies regarding the

analysis of GHG emissions in environmental documents. The technical advisory suggests three components for CEQA disclosure: quantification of GHG emissions from a project's construction and operation, determination of significance of the project's impact to climate change, and if the project is found to be significant, the identification of suitable alternatives and mitigation measures. The analysis contained herein follows this guidance. CAPCOA released a white paper, entitled *CEQA and Climate Change*, in January, 2008. The white paper examines various threshold approaches available to air districts and lead agencies for determining whether GHG emissions are significant. One of CAPCOA's proposed approaches in the white paper is a "non-zero" threshold of 900 annual metric tons for residential and office projects. Although not directly applicable, the commercial or residential threshold is considered appropriate for this project, because the fire station serves as a residence for fire department employees during their shifts. In addition, "house side" square footage represents a larger portion of the station than the apparatus bays.

CAPCOA and the State of California's Attorney General recognize that potential GHG impacts are exclusively cumulative in nature. Therefore, CAPCOA recommends that lead agencies require some level of mitigation even for projects that result in GHG emissions that are less than a numeric threshold. Because the County's Energy and Environmental Policy serves to reduce GHG emissions from new projects and existing operations, it is supportive of the goals of AB32 and is consistent with the CAPCOA recommendations. Thus, if a project results in emissions less than the numeric thresholds and implements design strategies consistent with the County of Los Angeles Energy and Environmental Policy, it is considered consistent with the goals of AB32, and is considered to have a less than significant impact with respect to its contribution to the cumulative impact of global climate change.

SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds in October 2008. SCAQMD proposed a tiered approach, whereby the level of detail and refinement needed to determine significance increases with a project's total GHG emissions. SCAQMD also proposed a screening level of 3,000 metric tons per year for commercial or residential projects, under which project impacts are considered "less than significant." The 3,000 metric ton screening level was intended "to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors."¹² For projects with GHG emissions increases greater than 3,000 metric tons per year, the use of a percent emission reduction target (e.g., 30 percent) was proposed to determine significance. This emission reduction target is a reduction below what is considered "business as usual." SCAQMD also proposes that projects amortize construction emissions over the 30-year lifetime of any given project. Project construction emissions can be amortized by calculating total construction period emissions and dividing by the 30-year lifetime

¹² SCAQMD, Board Meeting, December 5, 2008, Agenda No. 31, Interim GHG Significance Threshold Proposal – Key Issues/Comments Attachment D.

of the project. In December 2008, SCAQMD adopted interim CEQA GHG significance thresholds for use only when SCAQMD is the lead agency on Projects. These draft thresholds apply to stationary source (industrial) projects only, and include a 10,000 metric ton CO₂e screening level. SCAQMD has not recommended them for use by other lead agencies at this time. As of May 2009, SCAQMD and the Working Group are developing interim CEQA GHG significance thresholds for use in a broader context by other lead agencies.

In October 2008, CARB released a draft guidance document regarding interim CEQA GHG significance thresholds, wherein CARB proposed a tiered approach. CARB also proposed separate performance standards for construction, operational energy efficiency, water use, waste, and transportation, as well as a quantitative significance threshold in metric tons of CO₂e (carbon dioxide equivalent) per year. The draft guidance included neither specific performance standards nor numeric significance thresholds for residential or commercial projects. On April 27, 2009, CARB revealed that it had abandoned its development of the proposed interim CEQA GHG significance thresholds in a public meeting; however, as of May 2009 no formal announcement has been publicized on CARB's website or elsewhere.

While it is difficult to predict the specific impact of one project's incremental contribution to the global effects of GHG emissions due to a variety of factors, including the complex and long term nature of such effects and the global scale of climate change, it is possible to quantify a project's incremental increase in GHG emissions for comparison with the numeric threshold proposed in the CAPCOA white paper. The threshold of 900 annual metric tons proposed in the CAPCOA white paper will be utilized for determining significance on a project level, in accordance with Appendix G draft amendments discussed above. Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change, there is no basis for concluding that the project's very small theoretical emissions increase could actually cause a measurable increase in global GHG emissions necessary to force global climate change. The GHG emissions of the project alone cannot cause a direct physical change in the environment. It is global emissions in their aggregate that contribute to climate change, not any one source of emissions alone. Therefore, due to the incremental amount of GHG emissions estimated for this project, the lack of any evidence for concluding that the project's GHG emissions could cause any measurable increase in global GHG emissions necessary to force global climate change, and the fact that the project incorporates design features to reduce potential GHG emissions that are consistent with the goals of AB32, the project is not considered to have a significant impact with respect to global climate change on a project-specific basis. Moreover, there is no non-speculative method for assessing how the project's very small theoretical GHG emissions increase could cause a significant project-specific effect on global climate change.

CAPCOA and the State of California's Attorney General recognize that potential GHG impacts are exclusively cumulative in nature. Therefore, CAPCOA recommends that lead

agencies require some level of mitigation even for projects that result in GHG emissions that are less than a numeric threshold. Because the County's Energy and Environmental Policy serves to reduce GHG emissions from new projects and existing operations, it is supportive of the goals of AB32 and is consistent with the CAPCOA recommendations. Thus, if a project results in emissions less than the applicable numeric thresholds and implements design and operational strategies consistent with an applicable GHG reduction policy (the County of Los Angeles Energy and Environmental Policy), it is considered to have a less than significant impact with respect to its contribution to the cumulative impact of global climate change. These criteria are consistent with Appendix G draft amendments discussed above.

e. Methodology

(1) Construction

Construction emissions are calculated using the URBEMIS 2007 model, which is based on OFFROAD2007 model outputs. OFFROAD 2007 is an emissions estimation model developed by CARB to calculate emissions from construction activities. The output values used in this analysis were adjusted to be project-specific, based on usage rates of construction equipment, type of fuel, and construction schedule. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate GHG emissions values for each construction year (refer to Attachment A). The URBEMIS 2007 model outputs CO₂ emissions only. Therefore, CH₄ and N₂O emissions were estimated based on the emissions ratios for construction and industrial equipment from the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*.

(2) Operation

Mobile source emission calculations associated with operation of the proposed project utilize a projection of trip rate and annual vehicle miles traveled (VMT), which is derived from URBEMIS2007 defaults. Mobile source emissions are generated from vehicle traffic traveling to and from the project site, specifically fire trucks and commuter trips. Mobile source calculations also utilize EMFAC2007 and the CCAR GRP, Version 3.1 to generate emission factors for CO₂ and CH₄, and N₂O. It should be noted that greenhouse gas reduction factors from *Alternative Compliance Strategies*, contained in AB 1493, were not applied in the EMFAC2007 software. Therefore, such emissions are likely overstated as emission factors for fleet mixes containing post 2009 vehicles would not emulate reductions that would otherwise go into effect as a result of AB 1493 (if the federal waiver is granted). Should the federal waiver be granted, the State of California will be able to tighten emissions standards for those vehicles sold in the State.

The consumption of fossil fuels to generate electricity and to provide heating and hot water creates GHG emissions. Future fuel consumption rates and water demand are estimated based on square footage of the project. Natural gas and electricity usage factors derived from the CEQA Handbook (1993)¹³ are used to project fuel consumption rates. Embodied energy rates associated with the proposed project's future water supply needs are calculated using factors derived from the California Energy Commission (CEC). GHG emission factors from the Los Angeles Department of Water and Powers 2007 Annual GHG Emissions Report and the CCAR protocol are then applied to the respective usage rates, to calculate annual greenhouse gas emissions in metric tons. These emission factors do not reflect targeted future reductions in GHG emissions under SB 1368. Thus, these emission factors are considered conservative and representative. Operational impacts also include the operation of a diesel powered 200 Kw emergency generator, which is assumed to operate no more than 200 hours per year.

The CEC estimate for energy intensity of the water use cycle in southern California is used to calculate the energy usage related to water conveyance. Emission factors from the CCAR GRP, Version 3.1 are implemented in calculating the associated GHGs. Because water conveyance associated with the proposed project is regional in nature, the emission factors used in this component of the analysis represent a State-wide average of known power producing facilities, utilizing various technologies and emission control strategies.

f. GHG Emission Impacts

(1) Project-level

(a) Construction

Construction of the proposed fire station is anticipated to occur over approximately twelve months, tentatively scheduled to begin in October 2009 and end in September 2010. Emissions were calculated from fossil fuel powered on-site construction equipment and off-site vehicles used to transport construction workers and supplies. The first phase, mass site grading, was assumed to require 1.5 months and utilize the following typical equipment: graders, rollers, water truck, etc. The second phase, building foundation, was estimated to require 1.5 months and utilize the following typical equipment: cement and mortar mixers, concrete/industrial saws, and tractors/loaders/backhoes. The third phase, building construction, was estimated to last 8.5 months and require the following typical equipment: crawler tractors, rough terrain forklifts, tractor/loader backhoes, etc. Finally, the paving phase was estimated to last one month and require such typical equipment as rollers, paving equipment, etc.

¹³ *South Coast Air Quality Management District, California Environmental Quality Act Handbook, 1993.*

Construction of the fire station is projected to emit a total of 204 tons of CO₂e. Results of this analysis are presented in Table 1 on page 20. These emissions are less than the 900 annual metric ton threshold proposed by CAPCOA.

The project has committed to diverting seventy-five percent of the non-hazardous construction waste from landfills and either recycled or sent to the appropriate sites for reuse. Diversion of this amount of construction waste represents an improvement above business as usual and exceeds the County's proposed requirements. Construction emissions will be amortized across the 30 year lifetime of the proposed project, as recommended by the SCAQMD, and therefore, significance of construction-related GHG emissions will be discussed in conjunction with operational GHG emissions below.

(b) Operation

The proposed fire station would be approximately 10,500 square feet in size. The fire station would house eight firefighters at full staffing and a total of 14 personnel would be onsite during shift changes. The fire station design includes GHG-reduction measures that have been included in the quantitative analysis, such as improved energy efficiency and reduced water demand. As shown in Table 1, annual GHG emissions resulting from vehicle, electrical, and natural gas usage associated with operation of the proposed fire station was estimated to be a maximum of 33 metric tons CO₂e with implementation of the above listed design features. Including amortized construction emissions, total anticipated project emissions (7 metric tons +158 metric tons= 165 metric tons) are substantially lower than the 900 annual metric ton threshold proposed by CAPCOA. Therefore, construction and operational emissions are not expected to result in a significant impact at the project level.

(2) Cumulative

For capital projects, the County traditionally uses a Design-Bid-Build (DBB) approach and recent legislation now allows the County the option to use a Design-Build (DB) delivery method. In the DB approach, the County prepares Scoping Documents based on the County facility objectives, user needs, and program requirements. The scoping documents are used to select a design-build team to carry out both the design and construction of the project. Design-builder selection is on a "Best Value" basis, which means a value determined by objective criteria related to price, features, functions, life-cycle costs and experience.

The County provides general guidance on County-desired LEED credits to the designers and final LEED credit selection occurs during the design process. The selected Design-Builder may change the mix of LEED points from those anticipated by the County. This report is based on the County's experience on similar projects and the expected LEED measures which would

Table 1

Construction and Operational Greenhouse Gas Emissions	
Emission Source	CO₂e (Metric Tons)
Construction (total)	204
2004 Statewide Emissions	479,740,000
Percent	0.000043%
Construction (Amortized)	7
Annual Operations	
On-Road Mobile Sources (vehicles) ^a	29
Electricity	1
Water Conveyance	1
Natural Gas	1
Emergency Generator	28
Fire Trucks	98
Total Annual Operations	158
2004 Statewide Emissions	479,740,000
Percent	0.000033%
Total (Amortized Construction + Total Annual Operations)	165
Less than 900 tons CO₂e annually?	Yes
2004 Statewide Emissions	479,740,000
Percent	0.000034%

Source: PCR Services Corporation, 2009.

be included in the project. The fire station would be constructed to achieve a “Silver” rating from the USGBC’s LEED green building program. “Silver” is one of LEED’s four levels of certification, which also include “certified,” “gold”, and “platinum.” Each level requires that projects pursue a minimum number of LEED credits beyond the LEED prerequisites. Projects have flexibility with regard to which LEED credits to pursue. The expected project features are listed below:

- **Energy Conservation:** The project will install roofing materials with a high Solar Reflectance Index. The project will also consider integrating non-roof strategies, such as providing shade to paved areas and using paving materials with a high Solar Reflectance Index. By mitigating the heat island effect around the project site, the project will lower its air conditioning demand, and thus its peak energy usage. The project would reduce its energy usage by at least 21 percent below its ASHRE/IESNA 90.1-2004 baseline. This level of energy conservation exceeds the County’s proposed requirements.
- **Outdoor Water Conservation:** Landscape irrigation for the project will eliminate the use of potable water by incorporating drought resistant or low-water plants and

water-efficient irrigation techniques in addition to the use of recycled water for irrigation, and will include a smart irrigation controller.

- **Resource Conservation:** At least 50 percent of construction waste (by weight) will be recycled.
- **Tree Planting:** The proposed project will plant at least two 15-gallon trees on the project site to comply with the Green Building Ordinance.

In addition, the project will reduce its domestic water demand by at least 20 percent through the use of low-water or high-efficiency fixtures.

Furthermore, the California Office of the Attorney General released a Fact Sheet of various GHG mitigation measures that was updated in December 2008. The proposed project is consistent with the following applicable measures:

Energy Efficiency

- *Design buildings to be energy efficient.* The proposed project has committed to achieving LEED™ Silver Certification and is subject to the County of Los Angeles Green Building Ordinance. Accordingly, the project will achieve a 15 percent reduction in energy demand below Title 24, California's Energy Efficiency Standards.
- *Install light colored "cool" roofs and cool pavements.* The project will install roofing materials with a high Solar Reflectance Index. The project will also consider integrating non-roof strategies, such as providing shade to paved areas and using paving materials with a high Solar Reflectance Index.

Water Conservation and Efficiency

- *Create water-efficient landscapes.* Landscaping for the proposed project will incorporate drought resistant or low-water plants, water-efficient irrigation techniques, a smart irrigation controller, and use of recycled water for irrigation.
- *Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.* The proposed project will utilize water-efficient irrigation techniques and a smart irrigation controller.
- *Used reclaimed water for landscape irrigation in new developments and on public property. Install the infrastructure to deliver and use reclaimed water.* The proposed

project will use recycled water for irrigation, thereby eliminating the need for potable water for irrigation.

- *Design buildings to be water-efficient.* Install water-efficient fixtures and appliances. The proposed project will install water-efficient and low-water fixtures, and reduce potable water demand by 20 percent.

Solid Waste Measures

- *Reduce and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).* The proposed project will divert 75 percent of construction waste from landfills.

Annual GHG emissions resulting from vehicle, electrical, and natural gas usage associated with operation of the proposed fire station was estimated to be a maximum of 158 metric tons CO₂e with implementation of the above listed design features. This represents an approximately 0.000033 percent increase over existing state-wide GHG emissions.

It should be noted that implementation of the proposed project design features would result in lower GHG emissions as compared to a building constructed in accordance with current applicable building standards. As noted above, a temporary fire station is currently in operation adjacent to the proposed project site. The emissions estimated in Table 1 are conservatively presented as new emissions although they do not represent a net increase over current operations of the temporary fire station.

Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change, there is no basis for concluding that the project's very small theoretical emissions increase could actually cause a measurable increase in global GHG emissions necessary to influence global climate change. The GHG emissions of the project alone will not likely cause a direct physical change in the environment. It is global emissions in their aggregate that contribute to climate change, not any one source of emissions alone. Therefore, due to the incremental amount of GHG emissions estimated for this project, the lack of any evidence for concluding that the project's GHG emissions could cause any measurable increase in global GHG emissions necessary to force global climate change, and the fact that the project incorporates design features to reduce potential GHG emissions the project is considered not to hinder the goals of AB32. Conventional cumulative air quality analyses consider related projects; this approach is not appropriate because proximity is irrelevant to the transport and accumulation of GHG in the Earth's atmosphere. The County has adopted an Energy Policy, however, which sets the goal of reducing energy consumption in County facilities by 20 percent by the year 2015. The County's suggested measures to facilitate achieving this goal include implementing and monitoring energy and water conservation practices, implementing energy and

water efficiency projects, and enhancing employee energy and water conservation awareness through education and promotions. These measures would not hinder AB32 on a cumulative level. As stated above, the project will reduce its baseline energy consumption by 31.5 percent as part of its LEED certification. Thus, because the project would result in total GHG emissions less than the annual 900 metric ton threshold proposed by CAPCOA and adheres to the County's Energy and Environmental Policy, the project is not considered to have a significant impact on a cumulative level.

Effects of Global Climate Change on the Project

A substantial change in the global climate is anticipated to result in potential increases, globally, regionally, and/or locally, in the frequency and intensity of forest/wildland fires, rising sea levels and increased flooding, and decreasing water availability. The anticipated impact of each of these on the project is discussed below.

The proposed fire station is to be located within a suburban environment, incorporating fire resistant design and materials, as appropriate. Thus, wildfires are not expected to threaten the fire station directly. There are no heavily forested areas surrounding the project site. However, portions of the fire station's proposed service area abut naturally vegetated landscapes. Even with enforcement of California Public Resources Code 4291, requiring property owners to maintain appropriate firebreaks, structures within the service area of the proposed fire station may become vulnerable to climate change-induced wildfires. However, the location, equipment and staffing of the proposed fire station make it well situated and poised to combat any climate change-induced fires that may occur in its service area. Thus, impacts associated with climate change-induced wildland fires are considered to be minimal and no new impacts related to fire hazards are expected to occur beyond those analyzed in the Negative Declaration.

Climate change-induced flooding may occur from either a permanent rise in sea levels or temporary or seasonal rise in surface water. The City of Santa Clarita is located approximately 30 miles inland from the nearest sea (Pacific Ocean), at an elevation ranging from approximately 1,200 feet above mean sea level (msl) to 1,900 feet above msl. According to the California Climate Change Center's March 2009 draft paper, entitled The Impacts of Sea Level Rise on the California Coast, under medium to medium-high emissions scenarios the "mean sea level along the California coast will rise from 1.0 to 1.4 meters (m) by the year 2100." Thus, it is unlikely that sea rise will directly impact the Santa Clarita area. There is a creek bed which begins north east of the proposed fire station site, crossing under Thompson Ranch Road, running south along Sand Canyon Road and eventually emptying into the Santa Clara River approximately 0.85 mile from the proposed fire station. According to Flood Plain Map #06037C0835F, the site is located in a "Zone D," which indicates an area where flood hazards are undetermined, but possible. The site and surrounding area has or will be graded in accordance with City grading regulations and standard engineering practices to ensure that storm water would be directed off-site into the

municipal storm drain system and/or natural conveyance features. Therefore, risks to the proposed project from climate change-induced flooding are assumed to be minimal and no new flooding impacts beyond those analyzed in the Negative Declaration would occur.

Operation of the fire station would create a new nominal water demand for the water provider. Decreased water availability could negatively affect the operation of the proposed fire station. However, potential impacts from climate change-induced water shortages are anticipated to be minimal given the nominal demand for water by the station, and no new water supply impacts beyond those analyzed in the IS/ND would occur.

IV. SUPPLEMENTAL NOISE ANALYSIS

a. Purpose

The primary objectives of this supplemental technical environmental noise assessment are to identify the noise impacts from (1) construction of the fire station and (2) the typical everyday operation of the fire station. It is important to note the project description in the previously adopted IS/ND has not changed and the previously completed noise analysis also remains unchanged.

b. Applicable Noise Standards

(1) City of Santa Clarita Noise Ordinance

The City of Santa Clarita Municipal Code (SCMC), Title 11, Chapter 11.44, provides exterior noise limits and specific noise restrictions, exemptions, variances for exterior noise sources. In addition, warning devices on emergency vehicles and horns, burglar and fire alarms, or other warning devices expressly authorized by law are not included in the "Sound-amplifying equipment" per SCMC 11.44.0.020. Therefore, noise from a fire engine siren and public address systems (use for emergency announcement) are not limited by the City's Noise Limits as it is necessary for the protection of public safety. The applicable requirements to the project are discussed below.

(a) Section 11.44.040 – Noise Limits

City of Santa Clarita exterior noise limits for the various categories of land uses are provided in Table 2 on page 25. In accordance with the City noise limits, *"It shall be unlawful for any person within the City to produce or cause or allow to be produced noise which is received on property occupied by another person within the designed region, in excess of the levels indicated in Table 2."* Furthermore, the standard states that *"At the boundary line between*

Table 2

City of Santa Clarita Noise Limits

Region	Time	Exterior Sound Level, dB
Residential	Day	65
Residential	Night	55
Commercial and Manufacturing	Day	80
Commercial and Manufacturing	Night	70

^a *Corrections to Noise Limits. The numerical limits given here shall be adjusted by the following corrections, where the following noise conditions exist:*

Noise Condition	Correction (in dB)
1. Repetitive impulsive noise	-5
2. Steady whine, screech or hum	-5

The following corrections apply to day only:

1. Noise occurring more than 5 but less than 15 minutes per hour	+5
2. Noise occurring more than 1 but less than 5 minutes per hour	+10
3. Noise occurring less than 1 minute per hour	+20

Source: SCMC, Section 11.44.040, Noise Limits.

a resident property and a commercial and manufacturing property, the noise level of the quieter zone shall be used."

(b) Section 11.44.070 Special Noise Sources – Machinery, Fans and Other Mechanical Devices

"Any noise level from the use or operation of any machinery, equipment, pump, fan, air conditioning apparatus, refrigerating equipment, motor vehicle, or other mechanical or electrical device, or in repairing or rebuilding any motor vehicle, which exceeds the noise limits as set forth in Table 2 at any property line, or, if a condominium or rental units, within any condominium unit or rental within the complex, shall be a violation."

(c) Section 11.44.080 Special Noise Sources – Construction and Building

"No person shall engage in any construction work which requires a building permit from the City on sites within 300 feet of a residentially zone property except between the hours of 7 A.M. to 7 P.M., Monday through Friday, and 8 A.M. to 6 P.M. on Saturday. Further, no work shall be performed on the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas, Memorial Day and Labor Day."

(2) County of Los Angeles Noise Ordinance

Chapter 12.08 of the County of Los Angeles Municipal Code (LACMC) provides exemptions for noise sources within the unincorporated areas within the county. Specifically, noise from fire engine sirens and the public address systems (used for emergency announcement) is exempt from the County's Exterior Noise Standard as it is necessary for the protection of public safety, per LACMC Section 12.08.570.

c. Existing Ambient Sound Levels

The existing ambient sound levels at the nearest residence on Thompson Ranch Drive, east of the proposed fire station, as shown on Figure 1 (see Attachment B below), were measured on October 27, 2008, between 4 P.M. and 5 P.M. Existing ambient sound levels in the vicinity of the project site are dominated by auto traffic on Thompson Ranch Drive and Sand Canyon Road. The noise measurement was conducted using a Larson Davis Model 820, a Type 1 sound level meter. The sound level meter was mounted on a tripod at a height of five feet above the local grade elevation and was set up to record sound level for a fifteen minute interval. The measured sound level at the nearest residential community was 55 dBA (Leq). The existing ambient sound level at the residential community is within the City's noise limit of 65 dBA for daytime hours.

d. Significance Thresholds

The following thresholds of significance were developed to determine project noise impacts during construction and operation periods.

(1) Construction

Currently, the City of Santa Clarita Noise Ordinance does not provide quantitative standards or significance thresholds for assessing construction noise impacts. However, the City's Noise Ordinance specifies hour limits for construction activities within 300 feet of a residential zone. Therefore, as a referenced threshold, the noise limits shown in Table 2 have been used to evaluate noise impacts from construction activities. Noise during construction would have a significant impact if:

- Construction activities would exceed 65 dBA at single-family residential uses between the hours of 7:00 A.M. and 7:00 P.M. Monday through Friday, and 8 A.M. to 6 P.M. on Saturday.

(2) Operation

Project related noise would have a significant impact if:

- Project on-site stationary sources exceed 55 dBA during nighttime and 65 dBA during the daytime at any residential use.

e. Noise Impact Analysis**(1) Construction**

Noise impacts from project construction activity is a function of the sound generated by construction equipment, the location and sensitivity of nearby land uses, and the timing and duration of the noise-generating activities. The primary noise from the construction activities would be generated by vehicles and equipment involved during various stages of construction operations. Typically, the noisiest construction phase would be during site grading/excavation period. As such, the following analyzes construction activities during the grading/excavation period to assess worse-case noise impacts.

Typical noise-generating equipment that would likely be used during grading/excavation would include equipment such as graders, rollers, water truck, etc. Maximum noise levels from these individual pieces of equipment range from approximately 79 to 85 dBA at a 50 foot distance, based on measured noise data conducted by the Federal Highway Administration (FHWA Roadway Construction Noise Model User's Guide, 2006). These maximum noise levels would occur when equipment is operating under full power conditions. To more accurately characterize construction noise levels, the average noise level is calculated based on the quantity, type, and usage factors for each type of equipment that would be used. Using the industry standard sound attenuation rate of 6 dBA per doubling of distance for point sources (e.g., construction equipment), the construction noise levels were estimated at the nearest residential receptor. The nearest residential receptor is located approximately 300 feet east of the project site. Based on this distance, it is estimated that noise levels at the nearest residence during construction of the building would be up to approximately 65 dBA, but are not expected to exceed City's noise limit of 65 dBA, during daytime hours. Thus, it is anticipated that noise generated during construction of the project would result in a less than significant noise impact at the nearest residential use.

(2) Operation

(a) Traffic

The fire station would have a maximum of 14 firefighters; however, at full staffing it will only have seven firefighters on duty at any one time. The station also includes three parking stalls, one handicap and two visitor stalls. Based on the estimated daily business trips (two to three) and the anticipated number of fire station crew at any one time, the total daily trips generation would be minimal compared to the current daily traffic on local roads in the vicinity of the fire station (i.e., Sand Canyon Road). It is estimated that the change in existing noise level attributed to the project auto traffic would be less than one dBA. In an outdoor environment, a change of one dBA would not be noticeable. Therefore, no significant noise impact would occur.

(b) Operational Equipment

Noise generating equipment associated with the typical operation of the fire station would include heating, ventilating, and air conditioning (HVAC) equipment (i.e., outdoor condenser fans), an external public address system, and an emergency power generator (maximum power of 230 KW). The nearest residential community is located approximately 300 feet east of the project site. There is an existing pump station located southeast of the fire station site, which would provide some noise shielding for the fire station equipment to the residences. The following provides a discussion of impacts associated with operational equipment at the fire station.

(i) Building HVAC Equipment

It is anticipated that roof-mounted equipment would be used and shielded from the public view. A typical outdoor condenser fan (air conditioning equipment) generates a noise level of approximately 75 dBA at 10 feet. The nearest residential use would be approximately 400 feet from the specific location of the HVAC equipment. It is estimated that the HVAC equipment noise level at the nearest residential use would be 43 dBA, which is well below the City's limit of 55 dBA (nighttime hours). Thus, noise impacts from building HVAC equipment are concluded to be less than significant.

(ii) Public Address System

The fire station would have an outdoor public address (PA) system that would only be used on an intermittent basis during the daytime hours, between 8:00 A.M. to 5:00 P.M., to broadcast emergency calls. According to the fire department, it is estimated that the numbers of

emergency calls would be two to three per day (24 hours). As such, noise from the PA system would be intermittent and would only occur for a few minutes per day. Furthermore, the PA system volume would be limited to the extent necessary for fire personnel to hear emergency announcements, so as to minimize off-site noise from the PA system. As discussed above, the use of the PA system for emergency basis is excluded from the City's noise ordinance. Therefore, with compliance to the Fire District policies regarding use of the PA system and the exemption from the City's noise ordinance, noise impacts from PA system are concluded to be less than significant.

(iii) Generator

The fire station emergency electrical power generator would only be used during power outages; however, the generator equipment would typically be tested for 30 minutes each week, during daytime hours, to ensure the operational readiness of the generator. No scheduled tests for the generator are expected at nighttime. The generator technical specification specifies a noise level of 82 dBA at a distance of 10 feet. Per the current site plan, the generator would be located at the back (north side) of the fire station building. The residential community east of the project site would be partially shielded by the proposed fire station building. The estimated generator noise level at the nearest residential use would be 43 dBA, which is well below the allowable 65 dBA City's Noise Limits for residential uses during daytime hours as well as the measured daytime ambient noise level of 55 dBA. Therefore, the emergency generator noise level would not pose a significant noise impact.

(iv) Emergency Equipment

For the last two years, a temporary fire station has been operating adjacent to the project location and the construction of the new permanent fire station would not create a noise impact increase beyond existing conditions. As part of the operation of the existing temporary station and in compliance with Fire District policies, the Fire Department uses discretion when activating the fire engine siren when responding to calls within the surrounding community. Fire Department policy states that intermittent siren use during Fire Department emergency responses is permissible provided it is operated within at least 300 feet of an intersection where traffic control devices (signal lights, stop signs, ect.) are present. These practices would continue when the new permanent station is in operation. Fire Station 132 currently averages two to three calls per day and this level is expected to continue when the new station is constructed. Sirens would be used as necessary to warn pedestrians and motorists. Based on manufacturer's noise data (Federal Signal Corporation, Q2B Electro-Mechanical Siren), the siren would generate noise levels up to 123 dBA at a distance of 10 feet. When used, adjacent residences (300 feet to the east) may experience noise levels up to 93 dBA, which would exceed the existing ambient noise level (45 dBA) for less than 15 seconds. Such noise conditions are unavoidable with regards to emergency response. However, siren noise used in emergency circumstances is exempt from

the City and County noise ordinances, which were developed to protect the public. Therefore, with compliance to the Fire District policies regarding use of sirens and the exemption of emergency sirens from the City's and County's noise ordinances, noise impacts from siren noise are concluded to be less than significant.

In summary, the estimated noise levels generated by the operation of the fire station at the nearest residential use would not increase when compared to existing conditions or exceed the allowable levels established in the City or County noise ordinances. Thus, less than significant noise impacts would occur from operation of the fire station.

V. LIST OF PREPARERS

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- Kyle Kim, Acoustic Consultant

ATTACHMENT A – AIR WORKSHEETS

ADDENDUM TO THE ND FOR FIRE STATION 132 ATTACHMENT A

Air Quality Assessment Files

Provided by PCR Services Corporation

June 2009

- Attachment A-1 Construction Emissions Calculations
- Attachment A-2 Proposed Project Operations
- Attachment A-3 Greenhouse Gas Emissions- Summary & Calculation Worksheets

Attachment A-1

- Attachment A-1 Construction Emissions Calculations

Combined Summer Emissions Reports (Pounds/Day)

Project Name: Firestation 132

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	2.88	26.20	11.52	0.01	10.03	1.40	11.31	2.10	1.28	3.27	2,769.26
2009 TOTALS (lbs/day mitigated)	2.88	26.20	11.52	0.01	5.68	1.40	6.96	1.19	1.28	2.37	2,769.26
2010 TOTALS (lbs/day unmitigated)	2.69	20.63	10.38	0.00	0.00	1.31	1.31	0.00	1.20	1.20	2,021.19
2010 TOTALS (lbs/day mitigated)	2.69	20.63	10.38	0.00	0.00	1.31	1.31	0.00	1.20	1.20	2,021.19

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.06	0.02	0.05	0.00	0.00	0.00	20.86

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	0.12	0.16	1.48	0.00	0.24	0.05	146.29

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (lbs/day, unmitigated)	0.18	0.18	1.53	0.00	0.24	0.05	167.15

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 10/1/2009-11/13/2009	<u>2.88</u>	<u>26.20</u>	<u>11.52</u>	<u>0.01</u>	<u>10.03</u>	1.28	<u>11.31</u>	<u>2.10</u>	1.18	<u>3.27</u>	<u>2,769.26</u>
Active Days: 32											
Mass Grading 10/01/2009-11/14/2009	2.88	26.20	11.52	0.01	10.03	1.28	11.31	2.10	1.18	3.27	2,769.26
Mass Grading Dust	0.00	0.00	0.00	0.00	10.00	0.00	10.00	2.09	0.00	2.09	0.00
Mass Grading Off Road Diesel	2.46	21.30	8.41	0.00	0.00	1.07	1.07	0.00	0.98	0.98	2,057.24
Mass Grading On Road Diesel	0.38	4.82	1.95	0.01	0.02	0.21	0.23	0.01	0.19	0.20	587.64
Mass Grading Worker Trips	0.04	0.07	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 11/16/2009-12/25/2009	0.84	5.58	3.99	0.00	0.01	0.44	0.45	0.00	0.41	0.41	625.22
Active Days: 30											
Fine Grading 11/15/2009-12/27/2009	0.84	5.56	3.99	0.00	0.01	0.44	0.45	0.00	0.41	0.41	625.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.74	4.53	2.73	0.00	0.00	0.40	0.40	0.00	0.36	0.36	412.30
Fine Grading On Road Diesel	0.08	0.98	0.40	0.00	0.00	0.04	0.05	0.00	0.04	0.04	119.63
Fine Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.29
Time Slice 12/28/2009-12/31/2009	2.86	21.95	10.62	0.00	0.00	<u>1.40</u>	1.40	0.00	<u>1.28</u>	1.28	2,021.19
Active Days: 4											
Building 12/28/2009-08/14/2010	2.86	21.95	10.62	0.00	0.00	1.40	1.40	0.00	1.28	1.28	2,021.19
Building Off Road Diesel	2.86	21.91	10.43	0.00	0.00	1.39	1.39	0.00	1.28	1.28	1,998.58
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.70
Building Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.91
Time Slice 1/1/2010-8/13/2010 Active	<u>2.69</u>	<u>20.63</u>	<u>10.38</u>	0.00	0.00	<u>1.31</u>	<u>1.31</u>	0.00	<u>1.20</u>	<u>1.20</u>	<u>2,021.19</u>
Days: 161											
Building 12/28/2009-08/14/2010	2.69	20.63	10.38	0.00	0.00	1.31	1.31	0.00	1.20	1.20	2,021.19
Building Off Road Diesel	2.68	20.59	10.21	0.00	0.00	1.31	1.31	0.00	1.20	1.20	1,998.58
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.70
Building Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.91
Time Slice 8/16/2010-9/30/2010 Active	1.64	7.47	4.64	<u>0.00</u>	<u>0.00</u>	0.65	0.66	<u>0.00</u>	0.60	0.60	629.29
Days: 34											
Asphalt 08/15/2010-09/30/2010	1.27	7.47	4.63	0.00	0.00	0.65	0.65	0.00	0.60	0.60	627.13
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.22	7.35	4.05	0.00	0.00	0.65	0.65	0.00	0.59	0.59	554.09
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.87
Paving Worker Trips	0.02	0.03	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.17
Coating 08/15/2010-09/30/2010	0.38	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16
Architectural Coating	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16

Phase Assumptions

Phase: Fine Grading 11/15/2009 - 12/27/2009 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 28.23

Off-Road Equipment:

1 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Mass Grading 10/1/2009 - 11/14/2009 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 1.65

Maximum Daily Acreage Disturbed: 0.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 138.65

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 8/15/2010 - 9/30/2010 - Default Paving Description

Acres to be Paved: 0.25

Off-Road Equipment:

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 12/28/2009 - 8/14/2010 - Default Building Construction Description

Off-Road Equipment:

1 Crawler Tractors (147 hp) operating at a 0.64 load factor for 8 hours per day

1 Other Equipment (190 hp) operating at a 0.62 load factor for 8 hours per day

1 Rough Terrain Forklifts (93 hp) operating at a 0.6 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 8/15/2010 - 9/30/2010 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

3/25/2009 02:57:04 PM

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
Time Slice 10/1/2009-11/13/2009	<u>2.88</u>	<u>26.20</u>	<u>11.52</u>	<u>0.01</u>	<u>5.68</u>	1.28	<u>6.96</u>	<u>1.19</u>	1.18	<u>2.37</u>	<u>2,769.26</u>
Active Days: 32											
Mass Grading 10/01/2009-11/14/2009	2.88	26.20	11.52	0.01	5.68	1.28	6.96	1.19	1.18	2.37	2,769.26
Mass Grading Dust	0.00	0.00	0.00	0.00	5.66	0.00	5.66	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	2.46	21.30	8.41	0.00	0.00	1.07	1.07	0.00	0.98	0.98	2,057.24
Mass Grading On Road Diesel	0.38	4.82	1.95	0.01	0.02	0.21	0.23	0.01	0.19	0.20	587.64
Mass Grading Worker Trips	0.04	0.07	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.39
Time Slice 11/16/2009-12/25/2009	<u>0.84</u>	<u>5.56</u>	<u>3.99</u>	<u>0.00</u>	<u>0.01</u>	<u>0.44</u>	<u>0.45</u>	<u>0.00</u>	<u>0.41</u>	<u>0.41</u>	<u>625.22</u>
Active Days: 30											
Fine Grading 11/15/2009-12/27/2009	0.84	5.56	3.99	0.00	0.01	0.44	0.45	0.00	0.41	0.41	625.22
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.74	4.53	2.73	0.00	0.00	0.40	0.40	0.00	0.36	0.36	412.30
Fine Grading On Road Diesel	0.08	0.98	0.40	0.00	0.00	0.04	0.05	0.00	0.04	0.04	119.63
Fine Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.29
Time Slice 12/28/2009-12/31/2009	<u>2.86</u>	<u>21.95</u>	<u>10.62</u>	<u>0.00</u>	<u>0.00</u>	<u>1.40</u>	<u>1.40</u>	<u>0.00</u>	<u>1.28</u>	<u>1.28</u>	<u>2,021.19</u>
Active Days: 4											
Building 12/28/2009-08/14/2010	2.86	21.95	10.62	0.00	0.00	1.40	1.40	0.00	1.28	1.28	2,021.19
Building Off Road Diesel	2.86	21.91	10.43	0.00	0.00	1.39	1.39	0.00	1.28	1.28	1,998.58
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.70
Building Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.91
Time Slice 1/1/2010-8/13/2010 Active	<u>2.69</u>	<u>20.63</u>	<u>10.38</u>	<u>0.00</u>	<u>0.00</u>	<u>1.31</u>	<u>1.31</u>	<u>0.00</u>	<u>1.20</u>	<u>1.20</u>	<u>2,021.19</u>
Days: 161											
Building 12/28/2009-08/14/2010	2.69	20.63	10.38	0.00	0.00	1.31	1.31	0.00	1.20	1.20	2,021.19
Building Off Road Diesel	2.68	20.59	10.21	0.00	0.00	1.31	1.31	0.00	1.20	1.20	1,998.58
Building Vendor Trips	0.00	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.70
Building Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.91
Time Slice 8/16/2010-9/30/2010 Active	<u>1.64</u>	<u>7.47</u>	<u>4.64</u>	<u>0.00</u>	<u>0.00</u>	<u>0.65</u>	<u>0.65</u>	<u>0.00</u>	<u>0.60</u>	<u>0.60</u>	<u>629.29</u>
Days: 34											
Asphalt 08/15/2010-09/30/2010	1.27	7.47	4.63	0.00	0.00	0.65	0.65	0.00	0.60	0.60	627.13
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.22	7.35	4.05	0.00	0.00	0.65	0.65	0.00	0.59	0.59	554.09
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.87
Paving Worker Trips	0.02	0.03	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	62.17
Coating 08/15/2010-09/30/2010	<u>0.38</u>	<u>0.00</u>	<u>0.02</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>0.00</u>	<u>2.16</u>
Architectural Coating	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 10/1/2009 - 11/14/2009 - Default Mass Site Grading/Excavation Description

For Soil Stabilizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: V:\AQNOISE DIVISION\Active Projects\LACOFD\132\LAFD132.urb924

Project Name: Firestation 132

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2009 TOTALS (tons/year unmitigated)	0.08	0.63	0.30	0.00	0.11	0.04	0.15	0.02	0.03	0.06	63.72
2009 TOTALS (tons/year mitigated)	0.08	0.63	0.30	0.00	0.06	0.04	0.10	0.01	0.03	0.05	63.72
Percent Reduction	0.00	0.00	0.00	0.00	43.26	0.00	32.63	43.14	0.00	17.74	0.00
2010 TOTALS (tons/year unmitigated)	0.22	1.64	0.84	0.00	0.00	0.11	0.11	0.00	0.10	0.10	159.61
2010 TOTALS (tons/year mitigated)	0.22	1.64	0.84	0.00	0.00	0.11	0.11	0.00	0.10	0.10	159.61
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

AREA SOURCE EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.01	0.00	0.01	0.00	0.00	0.00	3.81

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.02	0.03	0.27	0.00	0.04	0.01	25.86

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
TOTALS (tons/year, unmitigated)	0.03	0.03	0.28	0.00	0.04	0.01	29.67

Attachment A-2

- Attachment A-2 Proposed Project Operations

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name:

Project Name: Firestation 132

Project Location: Los Angeles County

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.02	0.01	0.00	0.00	0.00	20.79
Hearth							
Landscape	0.01	0.00	0.04	0.00	0.00	0.00	0.07
Consumer Products	0.05						
Architectural Coatings	0.00						
TOTALS (lbs/day, unmitigated)	0.06	0.02	0.05	0.00	0.00	0.00	20.86

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	0.12	0.16	1.48	0.00	0.24	0.05	146.29
TOTALS (lbs/day, unmitigated)	0.12	0.16	1.48	0.00	0.24	0.05	146.29

Operational Settings:

Does not include correction for passby trips

Does not include double counting adjustment for internal trips

Analysis Year: 2010 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	0.33	14.00	dwelling units	1.00	14.00	141.44
					14.00	141.44

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.6	1.1	98.7	0.2
Light Truck < 3750 lbs	6.8	2.9	94.2	2.9
Light Truck 3751-5750 lbs	22.8	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.5	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.3	69.6	30.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						

Operational Changes to Defaults

Urbemis 2007 Version 9.2.4
Combined Winter Emissions Reports (Pounds/Day)

File Name:
Project Name: Firestation 132
Project Location: Los Angeles County
On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006
Off-Road Vehicle Emissions Based on: OFFROAD2007

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM2.5</u>	<u>CO2</u>
Natural Gas	0.00	0.02	0.01	0.00	0.00	0.00	20.79
Hearth							
Landscaping - No Winter Emissions							
Consumer Products	0.05						
Architectural Coatings	0.00						
TOTALS (lbs/day, unmitigated)	0.05	0.02	0.01	0.00	0.00	0.00	20.79

Area Source Changes to Defaults

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

<u>Source</u>	<u>ROG</u>	<u>NOX</u>	<u>CO</u>	<u>SO2</u>	<u>PM10</u>	<u>PM25</u>	<u>CO2</u>
Single family housing	0.13	0.20	1.42	0.00	0.24	0.05	132.57
TOTALS (lbs/day, unmitigated)	0.13	0.20	1.42	0.00	0.24	0.05	132.57

Operational Settings:

Does not include correction for passby trips
Does not include double counting adjustment for internal trips
Analysis Year: 2010 Temperature (F): 60 Season: Winter
Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Single family housing	0.33	14.00	dwelling units	1.00	14.00	141.44
					14.00	141.44

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	53.6	1.1	98.7	0.2
Light Truck < 3750 lbs	6.8	2.9	94.2	2.9
Light Truck 3751-5750 lbs	22.8	0.4	99.6	0.0
Med Truck 5751-8500 lbs	10.0	1.0	99.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.5	0.0	86.7	13.3
Lite-Heavy Truck 10,001-14,000 lbs	0.5	0.0	60.0	40.0
Med-Heavy Truck 14,001-33,000 lbs	0.9	0.0	22.2	77.8
Heavy-Heavy Truck 33,001-60,000 lbs	0.5	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	2.3	69.6	30.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	0.8	0.0	87.5	12.5

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	12.7	7.0	9.5	13.3	7.4	8.9
Rural Trip Length (miles)	17.6	12.1	14.9	15.4	9.6	12.6
Trip speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Operational Changes to Defaults

LACOFD- Fire Station 132

Electricity Usage

Electricity Usage											
Land Use	1,000 Sqft	Electricity Usage/Rate ^a (kWh/sq.ft\Yr)	Total Electricity Usage (Kwh\Year)	Total Electricity Usage (MWh\Day)	CO	ROC	NOx	Emission Factors (lbs/MWh) ^b			NO2
					0.2	0.01	1.15	PM10	SOx	CO2	CH4
								0.04	0.12	804.54	0.0057
Project											
Fire House/ Station	71.9	5,627	404,399	1,108	0.222	0.011	1.274	0.044	0.133	891.384	0.007
Total Project			404,399	1,108	0.22	0.01	1.27	0.04	0.13	891.38	0.01
Net Emissions From Electricity Usage					0.22	0.01	1.27	0.04	0.13	891.38	0.01
											0.00

Summary of Stationary Emissions

	CO	ROC	NOx	PM10	SOx
Total Existing Emissions (lbs/day)	0.00	0.00	0.00	0.00	0.00
Total Project Emissions (lbs/day)	0.22	0.01	1.27	0.04	0.13
Total Net Emissions (lbs/day)	0.22	0.01	1.27	0.04	0.13

^a Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook, SCAQMD, 1993.

^b Emission Factors from Table A9-11-B, CEQA Air Quality Handbook, SCAQMD, 1993.

LACOFD- Fire Station 132
Regional Operations Emissions Calculations

Fire Station 132

Regional Emission Calculations (lbs/day)

	VOC	NOx	CO	SO2	PM10	PM2.5
Existing						
Mobile	0	0	0	0	0	0
Area	0	0	0	0	0	0
Stationary	0	0	0	0	0	0
Total Existing	0	0	0	0	0	0
Project						
Mobile	0	0	1	0	0	0
Area	0	0	0	0	0	0
Stationary	0	1	0	0	0	0
Total Project	0	1	2	0	0	0
Net Project						
Net Mobile	<1	<1	1	<1	<1	<1
Net Area	<1	<1	<1	<1	<1	<1
Net Stationary	<1	1	<1	<1	<1	<1
Total Net	<1	1	2	<1	<1	<1
SCAQMD Significance Threshold	55	55	550	150	150	55
Difference	(55)	(54)	(548)	(150)	(150)	(55)
Significant?	No	No	No	No	No	No

Regional Emission Calculations

2:59 PM 6/12/2009

Fire Station 128

Worst-Case Scenario
Back-Up Diesel Generator

Kw	Hours	Hp
200	8	268.2044216

*1 kilowatt hour = 1.341022108 horsepower hours

Pollutant	Emission Factor (lbs/hp-hr)	Emissions (lbs/Hr)	Worst-Case Day
NOx	0.031	8.31433707	46.56028759
CO	0.00668	1.791605536	10.032991
SOx	0.00205	0.549819064	3.07898676
PM10	0.0022	0.590049728	3.304278474
CO2	115	3084350848	1727236475

Source:

<http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>

Worst Case is based on 8-hr usage with the generator working at 70% of capacity (AP42 Gasoline and Diesel Industrial Engine Source Emission Factors)

Attachment A-3

- Attachment A-3 Greenhouse Gas Emissions- Summary & Calculation Worksheets

LAFD 132
Construction GHG Emissions Calculations

CO ₂ e ^d (Metric Tons)		
Emission Source	2009	2010
CO ₂ Emissions	58	145
CO₂e Emissions	58	146
2004 Statewide Total ^c	479,740,000	479,740,000
Net Increase as Percentage of 2004 Statewide Inventory	0.00001%	0.00003%
^a Mobile source values were derived using EMFAC2007 in addition to the California Climate Action Registry General Reporting Protocol; Version 3.0, April 2008. ^b On site construction equipment values were derived using OFFROAD2007 in addition to the California Climate Action Registry General Reporting Protocol; California GHG Inventory. ^d All CO ₂ e factors were derived using the California Source: PCR Services Corporation, 2008.		

Emission Source	CO ₂ e (Metric Tons)
Project	
On-road Vehicles ^a	29
Electricity ^b	1
Water	1
Natural gas ^c	1
Back-up Generator	28
Fire Trucks	98
Total	158
Net Increase	
Total	158
2004 Statewide Total ^d	479,740,000
Net Increase as Percentage of 2004	
Statewide Inventory	0.000033%

^a Mobile source values were derived using EMFAC2007 in addition to the California Climate Action Registry General Reporting Protocol; Version 3.0, April 2008.

^b Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook, SCAQMD, 1993. Water conveyance energy rates from California Energy Commission Staff Report: California's Water - Energy Relationship. 2005

^c Natural Gas Usage Rates from Table A9-12-A, CEQA Air Quality Handbook, SCAQMD, 1993.

^d Statewide Greenhouse Gas Emissions Inventory:
<http://www.arb.ca.gov/cc/cei/emsinv/emsinv.htm>

^e All CO₂e factors were derived using the California Climate Action Registry General Reporting Protocol; Version 3.0, April 2008

Sources: PCR Services Corporation, 2008.

Electricity

Land Use	1,000 Sqft	Usage Rate ^a (kWh/sq.ft/yr)	(kWh/year)	MWh/year
Project				
Residential (DU)	1.0	4,445	4,445	4
Total Project			4,445	4
Net Project Electricity Usage			4,445	4

GHG	lbs/MWh ^b	lbs	metric tons	CO ₂ e (metric tons)
Existing				
CO ₂	724.12	0	0	0
CH ₄	0.0302	0	0	0
N ₂ O	0.0081	0	0	0
Project				0.00
CO ₂	724.12	3218.666332	1.459961299	1.459961299
CH ₄	0.0302	0.134237037	6.08888E-05	0.001278666
N ₂ O	0.0081	0.036003974	1.63311E-05	0.005062645
Net				1.47
CO ₂	724.12	3,219	1	1
CH ₄	0.0302	0	0.00	0.00
N ₂ O	0.0081	0	0.00	0

1 Total Annual CO₂e

^a Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook, SCAQMD, 1993.

^b Electricity Usage Rates from California Energy Commission Staff Report: California's Water - Energy Relationship. 2005

^c Emission factors for CO₂, CH₄, and N₂O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.0, April 2008

Natural Gas

Land Use	1,000 Sqft	Usage Rate ^a (cu.ft./sq.ft./mo)	Total Natural Gas Usage (cu.ft./mo)	Total Natural Gas Usage (cu.ft./year)	Total Natural Gas Usage (MMBTU/year)
Project					
Residential (DU)	1.0	3,169	3,169	38,029	39
Total Project			3,169	38,029	39
Net Project			3,169	38,029	39

^a Natural Gas Usage Rates from Table A9-12-A, CEQA Air Quality Handbook, SCAQMD, 1993.

GHG	Kg/MMBtu ^b	Kg	metric tons	CO ₂ E (Metric Tons)
Existing				
CO ₂	53.06	-	-	-
CH ₄	0.001	-	-	-
N ₂ O	0.0001	-	-	-
Project				0.00
CO ₂	53.06	2,058.18	0.93	0.93
CH ₄	0.001	0.04	0.00	0.00
N ₂ O	0.0001	0.00	0.00	0.00
Net				0.93
CO ₂	53.06	2,058.18	0.93	0.93
CH ₄	0.001	0.04	0.00	0.00
N ₂ O	0.0001	0.00	0.00	0.00

0.93 Total Annual CO₂E

^b Emission factors for CO₂, CH₄, and N₂O were derived from the California Climate Action Registry General Reporting Protocol; Version 3.0, April 2008.

Water and Wastewater Generation Factors

Land Use	Amount	Units	Water			Wastewater		
			AF/Year/Unit	MG/Year/Unit	MG/Year	GPD/Unit	MG/Year/Unit	MG/Year
Project								
Residential (DU)	1.0	DU	0.72	0.235	0.2	208	0.076	0.1
Total Project					0.2			0.1
Net Project					0.2			0.1

1 acre foot = 325851.433266421 gallon [US, liquid]

Water Conveyance (Water and Wastewater)

	Usage Rate			
	MGD	kWh/MG	(KWh/year)	(MWh/year)
Water Supply, Conveyance, Treatment, and Distribution	0.00	10,200	2,393	2
Wastewater Treatment	0.00	2,500	190	0
Net Project Water Power Usage			2,583	3

GHG	lbs/MWh ^B	lbs	metric tons	CO ₂ e (metric tons)
Existing				
CO ₂	724.12	0	0	0
CH ₄	0.0302	0	0	0
N ₂ O	0.0081	0	0	0
Project				0.00
CO ₂	724.12	1870.295	0.848351059	0.848351059
CH ₄	0.0302	0.078002	3.53812E-05	0.000743004
N ₂ O	0.0081	0.020921	9.48965E-06	0.002941791
Net				0.85
CO ₂	724.12	0	0	0
CH ₄	0.0302	0	0.00	0.00
N ₂ O	0.0081	0	0.00	0

On Road Mobile Source

Land Use	Daily VMT	Annual VMT
Project		
Residential (DU)	141	51,626
Total Project	141	51,625.60
Net Project	141	51,625.60

^a Multiplied Daily VMT by 365 to get Annual VMT

^b Factors derived from URBEMIS2007

Los Angeles County CO ₂ 2010 AVG Gram/Mile ^c	548.0511429
Los Angeles County CH ₄ 2010 AVG Gram/Mile ^c	0.036857143
Los Angeles County N ₂ O 2010 AVG Gram/Mile ^d	0.05

GHG	Gram/Mile	Grams	metric tons	CO ₂ E (Metric tons)
Existing				
CO ₂	548.0511429	-	-	-
CH ₄	0.036857143	-	-	-
N ₂ O	0.05	-	-	-
Project				
CO ₂	548.05	28,293,469	28.29	28.2934691
CH ₄	0.04	1,903	0.00	0.0399582
N ₂ O	0.05	2,581	0.00	0.8001968
Net				29.1336241
CO ₂	548.05	28,293,469	28	28.2934691
CH ₄	0.04	1,903	0	0.0399582
N ₂ O	0.05	2,581	0	0.8001968

29.1

Total Annual CO₂E

^c Averaged EMFAC2007 fleet values for 0-65mph

^d Emission factors for CH₄ and N₂O were derived from the California Climate Action Registry General Reporting Protocol; Version 2.2, March 2007

EMFAC2007 Summary

CO2	
Speed	Grams/Mile
0	341.823
5	1199.387
10	913.689
15	722.176
20	592.927
25	508.8
30	452.079
35	415.42
40	394.465
45	386.902
50	391.989
55	410.409
60	444.405
65	498.245
AVG	548.0511429

Pollutant Name: Carbon Dioxide Temperature: 60F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	941.697	5140.81	0	0	341.823
5	952.132	1182.76	1712.78	2870.59	2748.56	242.056	1199.387
10	719.611	894.25	1264.503	2392.58	2543.5	204.646	913.689
15	564.5	701.79	975.625	2023.01	2422.4	176.886	722.176
20	459.611	571.646	785.559	1763.67	2348.67	156.274	592.927
25	388.394	483.279	659.251	1662.8	2302.85	141.125	508.8
30	340.644	424.032	575.973	1583.89	2274.3	130.317	452.079
35	310.077	386.104	523.371	1523.34	2257.12	123.131	415.42
40	292.934	364.834	494.255	1479.18	2248.08	119.164	394.465
45	287.21	357.731	484.87	1450.45	2245.58	118.287	386.902
50	292.25	363.985	494.056	1436.88	2249.21	120.646	391.989
55	308.63	384.309	522.993	1438.86	2259.57	126.72	410.409
60	338.263	421.077	575.47	1457.5	2278.51	137.426	444.405
65	384.777	478.792	658.754	1495.01	2309.66	154.339	498.245

Pollutant Name: Methane Temperature: 60F Relative Humidity: 50%

CH4	
Speed	Grams/Mile
0	0.039
5	0.088
10	0.065
15	0.05
20	0.04
25	0.033
30	0.029
35	0.026
40	0.024
45	0.023
50	0.023
55	0.023
60	0.025
65	0.028
AVG	0.036857143

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0.162	0.424	0	0	0.039
5	0.065	0.08	0.1	0.355	0.175	0.313	0.088
10	0.05	0.062	0.079	0.207	0.123	0.267	0.065
15	0.041	0.05	0.063	0.111	0.091	0.237	0.05
20	0.032	0.041	0.052	0.067	0.07	0.218	0.04
25	0.027	0.034	0.044	0.055	0.056	0.206	0.033
30	0.023	0.03	0.039	0.045	0.046	0.2	0.029
35	0.021	0.027	0.035	0.039	0.04	0.199	0.026
40	0.019	0.025	0.032	0.034	0.036	0.202	0.024
45	0.018	0.024	0.031	0.032	0.033	0.21	0.023
50	0.018	0.023	0.03	0.032	0.031	0.224	0.023
55	0.019	0.024	0.031	0.033	0.031	0.246	0.023
60	0.02	0.026	0.033	0.037	0.031	0.28	0.025
65	0.022	0.028	0.036	0.043	0.033	0.333	0.028

Worst-Case Scenario
Back-Up Diesel Generator

Kw	Hours	Hp
200	8	268.2044216

*1 kilowatt hour = 1.341022108 horsepower hours

Pollutant	Emission Factor (lbs/hp-hr)	Emissions (lbs/Hr)	lbs/year	(tons/year)
CO2	4.15	3084350848	6168701697	2798075543

Source:

<http://www.epa.gov/ttn/chief/ap42/ch03/final/c03s03.pdf>

Worst Case is based on the generator working for no more than 200 hours per year

Operational On-Road Fire Station Equipment Emissions

Permanent Fire Station Apparatus

Scenario Year: 2010 -- Model Years: 1965 to 2010		
HHDT-DSL (grams/mile)		
CO ₂		2386.56
CH ₄		0.158857

Scenario Year: 2010 -- Model Years: 1965 to 2010		
HHDT-DSL (grams/idling hour)		
CO ₂		2386.56
CH ₄		0.158857

Worst-Case Day				
Classification	# Round Trips	Miles/Trip	Miles/Day	Hours Idling
HHDV	11	10	110	2

Pollutant	Emissions		
	grams/day	tons/year	tons/year CO ₂ e
CO ₂	267,295	97.56	97.56
CH ₄	17,792	0.01	0.14
	total		97.70

Assumptions:

- 3-4 estimated emergency responses/day
- 3-4 estimated non-emergency responses/day
- 2-3 estimated business trips/day
- 5 miles one-way/trip
- 2 hours max. idling/day

Pollutant Name: Methane

Temperature: 60F Relative Humidity: 50%

Speed MPH	ALL		LDT	MDT	HDT	UBUS	MCY	ALL
	MPH	LDA						
0	0	0	0	0	0	0.556	0	0
5	0	0	0	0	0	0.593	0	0
10	0	0	0	0	0	0.336	0	0
15	0	0	0	0	0	0.168	0	0
20	0	0	0	0	0	0.093	0	0
25	0	0	0	0	0	0.076	0	0
30	0	0	0	0	0	0.062	0	0
35	0	0	0	0	0	0.051	0	0
40	0	0	0	0	0	0.045	0	0
45	0	0	0	0	0	0.042	0	0
50	0	0	0	0	0	0.042	0	0
55	0	0	0	0	0	0.045	0	0
60	0	0	0	0	0	0.052	0	0
65	0	0	0	0	0	0.063	0	0
average								0.158857 grams/mile and grams/idling hour

Pollutant Name: Carbon Dioxide

Temperature: 60F Relative Humidity: 50%

Speed MPH	ALL		LDT	MDT	HDT	UBUS	MCY	ALL
	MPH	LDA						
0	0	0	0	0	0	6341.961	0	0
5	0	0	0	0	0	3789.975	0	0
10	0	0	0	0	0	3103.352	0	0
15	0	0	0	0	0	2536.887	0	0
20	0	0	0	0	0	2128.677	0	0
25	0	0	0	0	0	1986.225	0	0
30	0	0	0	0	0	1867.83	0	0
35	0	0	0	0	0	1772.484	0	0
40	0	0	0	0	0	1699.634	0	0
45	0	0	0	0	0	1649.01	0	0
50	0	0	0	0	0	1620.539	0	0
55	0	0	0	0	0	1614.326	0	0
60	0	0	0	0	0	1630.686	0	0
65	0	0	0	0	0	1670.236	0	0
average								2386.559 grams/mile and grams/idling hour

**ATTACHMENT B - FIGURE 1 - NOISE MEASUREMENT AND SENSITIVE
RECEPTOR LOCATIONS**
